Clinical Medicine

A Monthly Postgraduate Course

Vol. 33, No. 2 **February, 1926**

Dr. Vincent and the Rockefeller Foundation

GEORGE EDGAR VINCENT was born at Rockford, Illinois, March 21, 1864, the son of John Heyl and Elizabeth (Dusenbury) Vincent.

In 1885 he received the degree of A.B. from Yale University, and the Ph.D. degree from the University of Chicago in 1896. Several different universities have conferred the degree of LL.D. upon him.

He engaged in editorial work for a year or two after his graduation and then traveled in Europe and the Orient for a time.

Dr. Vincent became associated with the Chautauqua Institution in 1886, as Literary Editor of the Chautauqua Press; was made Principal of Instruction in 1898; and was elected president of the Institution in 1907, which position he held until 1915, since which time he has been its honorary president.

In 1892 his connection with the University of Chicago began as a fellow in sociology. His rise was rapid. He became professor of sociology in 1904 and held this chair until 1911. During the last four years of this time he was dean of the faculties of arts, literature and science of the University.

The University of Minnesota called him to its presidency in 1911, and this position he held until he resigned it in May, 1917, to become president of the Rockefeller Foundation.

It might occur to one, on first thought, that there was little in the way of promotion or enlargement of his field of effort which was possible to a man who had held the very responsible and dignified positions to which Dr. Vincent had been called, but when he assumed the presidency of the Rockefeller Foundation he became the head of an educational institution whose activities and influence are world-wide.

The Rockefeller Foundation was chartered by the State of New York in 1913 for the purpose of "promoting the well-being of mankind throughout the world". The endowment upon which it operates is now in excess of $120,000,000.00, the income from which is well over $7,000,000.00 per year.

While the object of the Foundation, as stated, is all-inclusive, its actual activities have been largely restricted to promoting medical education and public health work. In this it is assisted by the Rockefeller Institute for Medical Research, which has a separate endowment of over $6,000,000.00. Among the agencies through which this enormous work is carried on may be mentioned the International Health Board, the China Medical Board and the Division of Medical Education.

To give an idea of the scope of the Foundation's activities, there may be listed,

as part of its present and recent program, the control and prevention of hookworm, malaria, and yellow fever; a campaign against tuberculosis in France; improvement in public health administration, including the training of health officers and the intensive study of various problems in preventive medicine; and aid to medical schools in the United States, Canada, England, China, Belgium, Brazil, and the countries of Central Europe.

It is of interest to note that, after General Wm. C. Gorgas retired as Surgeon General of the Army, he assumed the directorship of the yellow fever campaign which was being carried on by the Rockefeller Foundation, and that Dr. Hideyo Noguchi, who discovered the organism of that disease, was working under the same auspices.

One of the useful studies which is now being carried on is that of the methods and problems of medical education. This consists in the collection and publication of brief but detailed descriptions of clinics, laboratories, and methods of teaching in various parts of the world, so that information along these lines may be brought to the attention of those most interested.

The Institute for Medical Research publishes the *Journal of Experimental Medicine* and has issued a number of volumes of *Studies* and *Reprints*, as well as several *Monographs*.

There is scarcely a field in the whole realm of medical science which does not, directly or indirectly, owe a debt of gratitude to the Rockefeller Foundation for information whose acquisition has been made possible by the immense resources at the disposal of this Institution.

Democracy is based on the doctrine that the adult intelligence must be allowed the greatest freedom of personal choice compatible with the freedom of other reasonable adults to make their own choices.—*Writers' Monthly.*

OSTEOPATHS AS GENERAL PRACTITIONERS

The medical journals and even the lay press have had much to say, of late, regarding the shortage of physicians in rural districts. In Dr. Cutter's and Dr. Haseltine's articles, last month, there were a number of pertinent observations. We have mentioned the subject, editorially, several times.

Now, however, comes a new light upon the question, and we feel that every practitioner in the country should be informed of the conditions so that he may govern himself accordingly.

In various places and at various times the statement has been made that, in the smaller communities, the regular physicians are being replaced by osteopaths, who do not consider it beneath their dignity to study and minister to the ordinary, every-day ailments of ordinary, every-day people —who are willing to deal with what Haseltine calls the "minor problems".

Now these gentlemen are openly laying claim to this field. In a recent bit of osteopathic literature, we find the following statements:

"The medical 'country doctor' is rapidly disappearing. The osteopathic graduate is taking his place. Osteopathic students are trained for that type of work; they see the opportunities awaiting them in the smaller communities and are taking advantage of the situation. We feel justified in stating that the osteopathic physician is the general practitioner of the future."

Strong words, and full of food for thought!

Let us see what justification there is for such broad claims.

The osteopath is licensed by law to practice in every state in the Union. Twenty-eight states have special osteopathic boards; and in 21 these applicants are examined by boards whose members are entirely or predominantly medical men.

Thirty states permit osteopathic graduates and licensees to use narcotics under the Harrison law; in all the states except Maine and Rhode Island they may practice obstetrics; in all but these two and New York they may do minor surgery; in 34 states they are allowed to perform major surgical operations.

Truly, gentlemen, their powers and scope of activity are but little inferior to ours, or so it appears!

It is stated that there are, at present, 6,750 practicing osteopaths in the country, and their schools are turning out more of them very rapidly. *Every one* of these men is a center of organized propaganda for their doctrines. Whenever any measure comes up in Congress or in the state legislatures which interests these people, pro or con, they *all* get after their representatives, tooth and nail, and generally succeed in convincing them that *they* are the spokesmen of public opinion—because *we* are too blind or complacent or just plain *lazy* to tell our side of the story.

Just at the present time we are not going to take sides on this matter—not overtly, at least. We are just trying to put the facts before you for your consideration.

Does it look to you as though their claim to the general practice of the future was going to be realized? Are we willing to have it realized? Are we prepared—we medical men—to surrender our position as family consultants to the American people? If so, it looks as though we have only to continue in our present attitude of universal indifference and all-too-frequent petty jealousies and misunderstandings and *watch things happen.*

If, on the other hand, we are *not* satisfied with present trends and tendencies, it behooves us to remember the remark which Benjamin Franklin made to John Hancock, at the signing of the Declaration of Independence, "We must all hang together or, assuredly, we will all hang separately".

There are 150,000 of us. If we exhibit only one-tenth the unity of purpose, zeal, cohesiveness and persistence shown by our osteopathic brethren we ought to be able to accomplish twice as much as they.

Your confreres in your own town are the first men to hook up with; then the County Medical Society (which ought to be a greater force in the land than it is!); then the State Society—but why go on? *Verbum Sap!*

Let everyone sweep away the snow from his own door and not meddle with the hoar frost on his neighbor's tiles.—Chinese Proverb.

NEWS IN 1925

Most of us have periods of more or less acute disgust as we turn the pages of our morning paper and find it, apparently, so largely filled with matter which is salacious, prurient or pandering to morbid or key-hole curiosity.

We are moved to wonder if, sometimes at least, we do not find about what we are looking for. Do we, consistently, read the accounts of diplomatic missions; the political situation in Morocco or Damascus; the financial crisis in France; the labor crisis in England? or do we spend most of our time in absorbing the shocking details of the latest murder mystery or society divorce scandal? We do not actually *have* to "kiss the cow" every time her slimy muzzle is presented for our salute.

In this connection it is interesting to note the comments on the Big News Stories of 1925, which are given in the *Editor and Publisher* for Jan. 2, 1926. Here we find the following listed as the stories which occupied the most space and commanded the widest attention during the past year: Scopes Evolution Trial; Shenandoah Disaster; Floyd Collins entombed at Cave City; Gunner Kassen's race to Nome with Diphtheria Antitoxin; the Coal Strike; the Caillaux Mission; the Rhinelander case; Amundsen's dash for the Pole; Col. Mitchell's attack on the Army; the death of W. J. Bryan; the Eclipse of the Sun; PN-9-No. 1 wreck off Hawaii; and the Locarno Peace Pact.

Of these thirteen great stories, two were strictly "human interest" stories—attempts to relieve fellow men in distress; three were popular presentations of various aspects of the advancement of science; two were stories of international diplomacy; three opened up fundamental questions affecting National Defense; one dealt with the problem of supply and demand of a necessity; one recorded the death of one of our most prominent citizens who, no matter what we may think of his good sense and judgment, was undoubtedly sincere; and only one was primarily prurient in its appeal, and that one was not *unadulterated* smut, but embodied aspects of the old, old question of marriage between different races.

Most of these stories were not of permanent importance and will not go into history, but if this is the sort of pabulum which newspaper readers absorbed with the greatest avidity we are not yet wholly lost to a sense of decency.

If those of us who would like to see less incentive to "cow-kissing" embodied in the public prints will make a little noise in the world it looks as though we had a sound foundation of popular opinion upon which to base a plea for less nastiness and more *news.*

If what we see is doubtful, how can we believe what is spoken behind the back?—Chinese Proverb.

LOBELINE SULPHATE

To start with a clear atmosphere, we will admit that lobeline, like Uriah Heep, is of "'umble parentage": The parent plant, *lobelia inflata* (Indian Tobacco), being neither more nor less than the erstwhile renowned (and reviled) "puking plant" of Thompson and his followers.

The Thompsonians gave lobelia-tea till their patients "puked, purged and sweated out the poisons within" and, as emetic purgative and diaphonetic, lobelia has not yet been excelled—or even equalled. The discovery of the plant's active principles and the possibility of administering definite doses of a definitely active salt brought lobeline sulphate into the limelight several years ago. At that time, and earlier, lobeloid, a concentration, was being quite extensively used as a generally useful expectorant and reliable relaxant in croup. Then, as the drug was more carefully studied, it became apparent that it created a very positive equalizing effect upon the circulation and gradually it was accepted as one of the most efficient antispasmodics available. Naturally, lobeline sulphate was exhibited not only in the eclampsias but in asthma, pneumonia, pertussis, tetanus, angina pectors, dysmenorrhea, rigid os, strangulated hernia, and even emesis gravidarum.

Some practicians gave large doses internally and secured results—though their patients objected strongly to the nausea or emesis they experienced: others administered the soluble sulphate in doses of 1-500 to 1-200 gr. hypodermically and secured full relaxation and marked diaphoresis without emesis.

As an emergency remedy, lobeline now found its way into the kit of most wide-awake clinicians and an extensive literature gives but a tithe of their experience.

At this time alpha-lobeline was introduced and the interest of those not already familiar with the action of lobelia was aroused. Today, with lobeline sulphate and alpha-lobeline at his disposal, the practitioner unequipped with one or both drugs is only partially armed.

This drug unquestionably exerts an almost specific action in pneumonia and moderate doses, administered early *to effect*, are apt to so modify the course of the disease that the doctor doubts his own diagnosis. Lobeline, therefore, must, today, be regarded as a standard remedial agent comparable, in its field, only with digitalis as a cardiant.

A brilliant mind, a skilful hand has nothing to do with the health or duration of life of an individual, which is determined by his power to combat against disease and age.—Homer Lee.

By labor of thinking, man has confidence in himself to master the sciences, also to be good.—A. B. Jamison.

BOUND VOLUMES AND THE 1925 INDEX

An advertisement that was widely current not long ago made a rather pertinent query as to whether the reader's head was "a file or a pile".

Let us modify this to apply to your own desk and book shelves. Are they files or piles?

During the year recently ended, a large amount of material of permanent interest and value was published in CLINICAL MEDICINE, but you will be unable to use that material unless you procure an index and have the volume bound.

As to the index, we are now preparing it, and *as soon as you read this* write, "I want the 1925 index" on one side of a postal card, and our address (North Chicago, Ill., remember) on the other and mail it. The index will be sent you, without expense, as soon as it is ready.

As to the binding, we will be glad to look after that for you if there is no bindery handy. We can have a volume bound for you in substantial library buckram, red, green or black, with your name in gold on the back, for $1.75. Send us the *complete* file, *express prepaid*, with your check for the cost of binding and your choice as to color (if no choice is stated we will have it bound in *black*). We will put in the index and, when the work is done, send you the volume, *express collect*. The file *must* be complete, except that we can supply a few copies of the October and December numbers, *only*.

If you are not intending to bind or keep your journals for reference, we will be deeply grateful if you will send us, express collect, copies of all except the October and December numbers, *especially* those for January, February and May.

If you have not, heretofore, been in the habit of having your journals bound, better start in *right now* to save them and keep them in shape. Remember, it is not alone for the leading articles, but the *Current Medical Literature* gives you a fairly representative survey of the field, and the *Thumbnail Therapeutics*, *Diagnostic Pointers* and other departments contain material, one reference to which might easily be worth the price of a bound volume to you.

It is no disgrace to be sick, the disgrace comes if you stay sick and enjoy telling about it.—*Popular Health*.

HEALTH IN SCHOOLS

The Scanlan School, in Chicago, with the cooperation of the Board of Education, the City Health Department and the Municipal Tuberculosis Sanitarium is putting on a very elaborate program of health education and health conservation among the 2000 children in the school.

Complete physical examinations were made and recorded for practically all of these children, and these records formed the basis of the prophylactic and corrective measures which were undertaken.

Physicians are in charge of the health work—one looks after contagious diseases in general; another gives Schick tests and immunizing injections to those whose parents give their consent; a third is carrying on a program of goiter prevention. The physical director of the school has planned posture work and corrective exercises for those requiring them.

The school printing press, operated by the children, under the direction of the teacher in printing, has prepared all the necessary blank forms.

Consideration of the figures obtained from a study of these reports is most interesting, for this school is believed to be a fair cross-section of our school-age population. Of these children, 42 percent were anemic; 54 percent had *diseased*—not merely enlarged—tonsils; 74 percent had decayed teeth; 41 percent showed enlargement of the thyroid and 48 percent enlargement of the cervical glands; and 26 percent exhibited posture defects. This clearly indicates the urgent necessity for work of this character.

The children in whom any signs of tuberculosis are found are immediately placed in rooms where the windows were kept constantly open, and where cots are provided on which they are required to rest for a definite period every afternoon. Eskimo suits are provided for them in cold weather.

Those who have postural defects are required to take corrective exercises daily, and all seats and desks are adjustable, so as to obviate such defects in the future. Play on the playgrounds is carefully supervised to the end that maximum benefit may be secured.

Every community which is not already awake to the necessity for such work as this should immediately be awakened, and the physicians of the various communities are the ones to do it.

At least one physician in every community should qualify himself (if not already qualified) to make such examinations and recommend such changes in the school equipment or arrangements as seem to be necessary. If several physicians are or can be interested, so much the better. They can then talk to the school-board as a group, thus avoiding any suspicion of self-seeking, and can divide the work of examination among them, according to their several predilection and abilities, directing children who have defects needing correction to go to their *family physicians* for attention.

By carrying out such a program as this, you will be performing a distinct and valuable service to your community and will, incidentally, add to your clientele a class of patients from the care of which the most valuable and satisfactory results can be obtained.

The need for this service *already exists*. The time to go about it is *now*. The responsibility for the health conditions in every community and for the education of the public in matters of hygiene rests in the hands of the physicians. Let us not be found wanting in the performance of this obvious duty.

New truths come only to prepared minds.

STOVARSOL AS ACETARSONE

Stovarsol is one of the newer arsenicals which has recently been introduced from France. It is now being manufactured in America, under the American name, approved by the Council on Pharmacy and Chemistry, of *Acetarsone*.

This new drug has been quite highly recommended for the treatment of amebic dysentery (See CLINICAL MEDICINE, Sept., 1925, p. 647, and *J. A. M. A.*, June 20, 1925, p. 1913).

In the French literature cases are reported of its successful use in cases of *tertian malaria*, especially those inoculated in the treatment of paresis, after the method of Wagner-Jaurregg (See, CLIN. MED., July, 1925, p. 436), as well as in *lambliasis* and other intestinal disorders.

There is evidence to the effect that the oral administration of acetarsone produces a cure of syphilitic lesions in rabbits and monkeys, and some clinical reports indicate that it has resulted favorably in cases of human syphilis. It appears, however, to have little effect upon the Wassermann test

unless it is combined with intramuscular injections of bismuth, when a negative test has been obtained after 6 to 8 weeks.

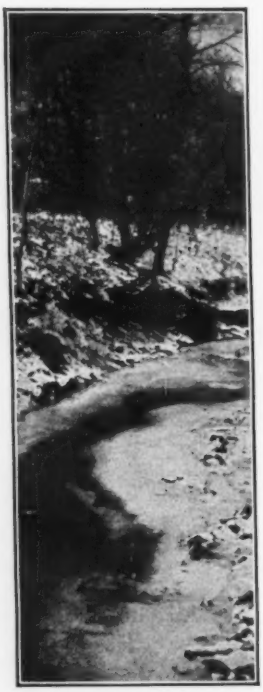
Acetarsone may be given to adults, by mouth, in doses of 1.0 G (15 grains) daily or every other day, with intermissions after a week or 10 days. It is usually administered half an hour before breakfast.

Subcutaneously the drug may be given, in a solution of 0.25 G. to 2 Cc. of water, in doses beginning with 0.5 G. and going up to 1.5 G., repeated 2 or 3 times a week. It is better tolerated by the subcutaneous tissues than is arsphenamine.

The sodium salt, 1 G. to 10 Cc. of distilled water, may be given intravenously when this seems to be indicated, though one of the chief advantages of acetarsone is that it produces gratifying results when given by mouth.

Remember that this drug is still in an experimental stage; that it is not without danger if carelessly handled; that it is inferior to the arsphenamines in the treatment of syphilis, though its action in amebic dysentery, malaria and lambliasis is most encouraging.

If you desire to use it, and make a contribution to the early clinical literature on the subject, look up the references and remember the American name when you buy or prescribe it.



Silver Morning

FROM my window, early,
I look out upon a transmuted world.
All baser things are turned
To precious metal.
The earth is a tapestry
Of cloth-of-silver.
The trees are silver lace.
Every tiny twig is embroidered
With diamond crystals,
All pointing East.
The very air is silver, too,
And the familiar roofs and gables
Loom mysterious, fascinating.

Outside, the shining cold
Stings and excites me.
I want to run and shout
And be young and foolish and happy
And have marvelous adventures.

Such a wonderful, silver world!
With the rising sun
A solitary inlay of gold.

G. B. L.

Leading Articles

Treatment of Gonococcal Infection by Diathermy

By E. P. CUMBERBATCH, M.D., M.R.C.P., London, England

IN THIS communication I propose to describe the methods which we have been using and the results which we have obtained in the treatment of gonococcal infection by diathermy. This method of treatment has been used for many years in my department at St. Bartholomew's Hospital. We have found it extremely effective, and the best therapeutic results have been obtained where other methods have failed.

The treatment of gonococcal infection by heat is a rational procedure because the organism can be destroyed at a temperature insufficient to damage the living tissues. This was known before the days of diathermy and attempts were made to cure anterior urethritis by introducing heated sounds into the infected channel, and to relieve arthritis by directing currents of hot air on the inflamed joints. These methods were unsuccessful because the application of heat to the skin or mucous membrane does not raise the temperature of the parts which lie more than a trifling distance below the surface. In diathermy, however, the heat is not applied "ready-made" to the surface. It is actually produced in the tissues themselves, along the path taken by the current. If, then, we are able to direct the current through the regions which are infected by the gonococcus and obtain a suitable temperature, the organism will no longer be able to survive.

Attempts were made many years ago, soon after the introduction of diathermy, to cure gonorrheal urethritis in men by this method of treatment. They do not seem, however, to have been very successful. The application of a uniform degree of diathermy to the male urethra in its entire length is very difficult and it is questionable whether a satisfactory method has yet been discovered.

Early Work in England

The treatment of gonococcal infection by diathermy in England originated in the following way. Soon after the introduction of diathermy into St. Bartholomew's Hospital by my predecessor, the late Dr. Lewis Jones, in 1910, I commenced to investigate the effect of the new treatment on various forms of arthritis. The results obtained in gonococcal arthritis were so good that the action of diathermy was investigated in cases of gonococcal infection of the testis and epididymis, cervix uteri and urethra in women, the prostate and seminal vesicles, and, later, the Fallopian tubes. Last of all the treatment of anterior urethritis in men was investigated.

Since 1919 I have had the cooperation of my colleague and former pupil, Dr. Robinson, who has made many valuable suggestions and overcome many difficulties in technic. But for his help the investigation could not have been continued.

The earliest experience, at St. Bartholomew's Hospital, was thus obtained in cases of gonococcal arthritis. At first diathermy was applied to the joints themselves, but we have since learned that it is necessary to apply the treatment to the primary foci from which the secondary infection is disseminated before the arthritis can be brought to an end.

We have also learned that efficient application of diathermy to the primary foci, viz., the prostate and vesicles in the male and the cervix uteri in the female, will bring the arthritis to an end even if the joints are not included in the treatment. We have also found that gonococcal infection of the testis, epididymis and vas deferens can be brought to an end by applying diathermy to the prostate and vesicles only. So also the infection of the tubes and ovaries in the female can be brought to an end by applying diathermy to the cervix uteri only.

It is now our custom to give a thorough and complete course of diathermy to the prostate and vesicles in men, whatever parts are infected in addition. But, as I

shall show later, it is advisable, in cases of orchitis and epididymitis, to include the contents of the scrotum in the diathermy during the early part of the course. In women we give a thorough and complete course of diathermy to the urethra and cervix uteri, even if the joints and fibrous tissues, or the Fallopian tubes and ovaries are infected in addition. But, if the tubes are infected, we have found it necessary to apply diathermy to these parts before commencing the treatment of the cervix. The reason for this will be shown shortly.

Technic of Treatment in Women

I shall now describe the method evolved by Dr. Robinson and myself for applying diathermy to the cervix uteri and urethra in women. The details of this method were worked out, one by one, after prolonged trial of others, and we have found it the most satisfactory. We always treat the urethra first, whether it is infected or not, because the strength of the current applied to this part furnished the guide to the correct strength of current for the insensitive cervix. As soon as the urethra has received its first application of diathermy, we treat the cervix. This completes the first seance. At the second and succeeding seances, we proceed in the same manner and always treat the urethra before the cervix.

The details of our electrodes and technic are the following: The urethral electrode is a thin-walled metal tube, 6 in. long and 3/16 in. in diameter. One end is rounded and closed, the other carries a terminal for attachment of the cable from the diathermy machine. One and one-half inch from the rounded end is an ebonite disc. Beyond the disc the wall of the tube is removed in part. A thermometer is placed in the tube so that its bulb rests at the closed end and its scale can be read through the side opening in the tube.

The patient lies on her back and that part of the tube which lies between the closed end and the ebonite disc is introduced into the urethra. The end carrying the terminal is supported on a special stand and connected by a cable to the diathermy machine. The circuit is completed by a belt electrode of thin sheet lead, 3½ in. wide, and of length sufficient to pass around the pelvis with its free ends overlapping. It is placed around the pelvis in contact with the bare skin and its ends are secured by a special clip. The current is now started. It is increased little by little. The patient feels aware of a sensation of heat within her urethra. The current is cautiously increased until a point is reached at which the patient feels the sensation changing to one of pain. At this point the current is slightly reduced until the pain just disappears. The reading of the amperemeter is carefully noted and the current allowed to remain at this strength for ten minutes. It is then reduced to zero. By means of the thermometer (which must be calibrated to allow for errors arising from its situation in a metal tube) we have found that the change of sensation from heat to pain occurs between 114° and 115° F. The more the confidence and cooperation of the patient are secured the nearer to the latter figure will the change be found to occur.

Treating the Cervix

A speculum is now passed into the vagina and the external os of the cervical canal brought into view. The cervical electrode consists of a flexible metal rod, made of a tin-lead alloy. It is 14 in. long and 3/16 in. in diameter. It is graduated and a rubber tube is passed over it. This tube is 12 in. long and its internal diameter is a trifle larger than that of the metal rod so that it can slide easily over the latter. The rod is bent to an obtuse angle at a point ¾ in. from the end so that it can be readily inserted into the canal of the cervix. It is placed in position in the canal and the rubber tube is pushed down over it until its inner extremity makes contact with the cervix. The position of the outer end of the tube in relation to the graduation lines on the rod will show how far the latter has been introduced into the cervix. The length of insertion is usually ¾ inch. The outer end of the cervical electrode is supported on the stand previously mentioned and the belt electrode is allowed to remain in position. The current is started and increased until its value is one-half of that used for the urethra, and it is allowed to flow for 10 minutes.

The temperature reached in the mucous membrane of the cervical canal will be the same as that attained in the urethra; this is so because the current-density is the same in both parts. Since the cervical electrode was inserted for ¾ inch (i. e. for half the length of insertion of the urethral electrode), the area of contact of tissue and metal is one-half of that which was made when the urethra was treated. But, as the

current used for the cervix was half that used for the urethra, the current-density is the same in each part. It may, therefore, be concluded that the same temperature will be reached in each part. That this conclusion is correct has been proved by the use of a cervical electrode containing a thermometer.

In practice we do not use electrodes containing thermometers, either for the urethra or the cervix. A cervical electrode containing a thermometer is not a handy instrument; it is rigid and inflexible. All our earlier work in the devising of technic was done without the use of thermometers, and we still prefer to rely on the sensations of the patient rather than on the readings of thermometers when treating the urethra. This confidence has not been misplaced. In no case have we damaged this sensitive part or produced any reaction sufficient to cause painful micturition.

The difficulty which long baffled us, viz., that of procuring a known temperature in the insensitive cervix, has been overcome by using the method just described. The cervix can be heated higher than 114° F. without producing apparent structural damage but we think that the self-protective powers of the tissues against invading organisms may be lessened by heat greater than 114° F. We also believe that heat sufficient to cause pain will inhibit these powers. For these reasons we do not heat infected tissues higher than 114° F.

In multiparae the urethra and canal of the cervix will admit an electrode 3/16 inch in diameter. In nulliparae the urethra will admit an electrode of the same diameter but the canal of the cervix is narrower and an electrode of smaller diameter must be used. The current used for the cervix must therefore be less than a half of that used for the urethra. Its strength must be calculated from the area of contact made by the narrower electrode with the cervix so that the current-density is the same in the cervix as in the urethra.

Treating the Body of the Uterus

If the internal os of the canal of the cervix is patent, the electrode will slip easily into the lumen of the body of the uterus. When this happens, we think it likely that the mucous membrane of the uterus has been infected. We then pass the electrode as far as the fundus and note the length of introduction. The current must then be more than a half of that used for the urethra. Its exact value must be calculated so that its density is the same as that used when the urethra was treated.

When we think it inadvisable to pass a speculum into the vagina in adult or adolescent women, we apply diathermy to the uterus by the rectal route. Our method is the same as that which we use for the treatment of the prostate. This will be described shortly. We use a similar method in children and infants. Our youngest case of gonococcal infection—proved by the discovery of gonococci—was in a girl of 5. We have also applied diathermy, by the same method, to two infants of 2½ years of age. In patients of such tender age we use currents not stronger than one or one-and-a-half amperes, and do not attempt to procure a temperature higher than 105° F. Otherwise they become restive and uncomfortable.

Treatment of the Prostate and Vesicles

To subject the prostate and vesicles to diathermy we pass an electrode into the rectum and complete the circuit by the belt electrode already described. The rectal electrode is a hollow metal case, 8 in. long, oval in cross section, measuring ½ in. in its longer diameter. One end is rounded and closed; the other end carries a terminal. In its interior is a metal case for a thermometer. The rounded end is passed through the anus and introduced for four inches; this is usually the maximum length for which it can be inserted. The outer end of the electrode is depressed on to the level of the couch by a sand bag. The circuit is completed by means of the belt electrode placed around the pelvis. The current is gradually increased. The patient feels a sensation of heat in the rectum. The heat increases and a point is reached when the sensation becomes disagreeable and aching. This occurs at about 112° F. It does not appear to be actual pain but is unpleasant. The current is then reduced until all unpleasant sensation disappears, and it is allowed to flow for 20 minutes. The seances, 6 to 8 in number, are held twice weekly.

It is possible that the aching sensation is due to swelling of the prostate in its capsule. If a narrower tubular electrode, ¼ inch in diameter, is used in place of that described above, the ache is not so apparent, and we have been able to increase the rectal temperature to 114° F. when a definite sensation of pain is produced. With the narrower electrode the greater degree of

heat is more localized around the metal tube and there is perhaps less swelling of the prostate.

In the method which I have described above, it is uncertain whether the seminal vesicles are subjected to diathermy in their whole length. The distal half of each vesicle lies beyond the innermost end of the rectal electrode. We believe that if the distributing electrode is placed, not around the pelvis, but higher up, around the waist, the vesicles in their entirety will be heated. The application of the sand bag to the end of the electrode presses the prostate forward toward the anterior abdominal wall, the electrode acting as a lever and the anus as the fulcrum. The distal portions of the vesicles must therefore come to lie across the inner end of the electrode. If now the belt electrode is placed around the trunk at a higher level, i. e. around the waist, the lines of flow of the current will pass oblique-upwards and outwards between the electrodes and traverse the vesicles in their entire length as well as the major part of the prostate. The position of the directing electrode around the waist is therefore the best when we wish to apply diathermy to the vesicles in their entire length. We believe, however, that in either position of the directing electrode there will be a spread of heat by convection to all parts which are close to the active electrode but out of the "direct line of fire" between the two electrodes.

It is evident that the temperature reached in the prostate must be lower than that indicated in the rectum. We believe that the prostate attains a temperature of about 108° F.

We have applied diathermy to the cervix in women by means of a rectal electrode similar to that described and have found that a thermometer in the canal of the cervix shows a temperature of 108° F. Since the prostate and cervix both bear the same relation to the rectal electrode, we think we are approximately correct in saying that the interior of the prostate attains a temperature of 108° F.

Since we are unable to subject the prostate to the same temperature as that reached in the urethra and cervix in women we compensate for it by holding more sessions and making them longer. It has been shown that a lower temperature will kill the gonococcus if the duration of the exposure is lengthened. The figures obtained by experiment are not, however, of much guide in the therapeutic work because the conditions attending experimental work and clinical therapy are different. We are also of the opinion that the action of diathermy is not entirely on the gonococcus itself. We believe that the heat also increases the self-protective powers of the infected tissues.

The maximum temperature which the tissues can tolerate without pain is about 114° F. and we do not think it advisable to proceed beyond it. At this temperature we think that the action of diathermy is mainly a direct one, on the organisms themselves. At lower temperatures we believe that the action is more indirect, stimulating the tissues to remove the infecting organisms, but, nevertheless, diminishing the vitality of the latter.

Testis and Epididymis

In cases of arthritis we have found it unnecessary to apply diathermy to the joints themselves. The treatment of the prostate and vesicles or cervix and urethra is sufficient to bring the arthritis to an end. So also is the treatment of the prostate and vesicles sufficient to bring orchitis and epididymitis to an end, but we found that pain could be more quickly relieved by including the scrotum in the diathermy. We therefore replace the directing (belt) electrode by a second active electrode and apply it to the scrotum: the rectal electrode remains in position. After the first three seances the scrotal electrode is replaced by the belt electrode and five more seances are held. The three applications to the scrotum are, as I will show, sufficient to bring the orchitis and epididymitis to an end. The prostate and vesicles receive some diathermy when the scrotum is being treated, but they are more adequately treated when the belt electrode is placed round the trunk. It is absolutely imperative to give thorough treatment to the prostate and vesicles if the action of the diathermy on the testis and epididymis is to be permanent.

If salpingitis is present it is imperative to treat the cervix by diathermy if the infection of the tubes is to be permanently abolished. We found, however, that the application of diathermy to the cervix, in cases of salpingitis, caused pelvic pain. The pain developed during the application and lasted for a day or even a week. We found that this pain could be prevented by the following procedure. During the first three seances (given bi-weekly), a gentle appli-

cation of diathermy is given to the uterus and its appendages by means of a vaginal electrode, the circuit being completed by the belt electrode placed around the waist. The current should not exceed one-and-a-half amperes. Diathermy can then be concentrated on the cervix by the method already described.

If the ligaments and bursae of the feet are infected it is necessary, especially in cases of long duration, to prescribe massage and remedial exercises, because the patient adopts faulty position of his feet when he walks, in the effort to reduce pain. Diathermy is an excellent preliminary to this treatment.

Results

I shall now describe, in brief, the results which we have obtained. We have treated 52 cases of gonococcal arthritis. The youngest case was a girl of 8, the oldest a woman of 60. In many cases a single joint, usually the knee, was affected. In a few cases many joints were affected. Most of the cases were out-patients; some were in-patients and a few had been confined to bed for long periods.

In all these cases the treatment of the primary foci by diathermy brought the arthritis to an end. Early cases, in which no permanent structural changes had occured, were cured. In advanced cases, in which these changes had taken place, the arthritis was arrested: pain was abolished, swelling was reduced, and the range of movement increased. These advanced cases were subjected to treatment by massage and movement after the diathermy was completed and further improvement was effected. This additional treatment caused no return of the arthritis. In all the cases which we were able to keep under observation the therapeutic effects were maintained.

In all our cases of gonococcal orchitis and epididymitis, 48 in number, the pain, tenderness and swelling were brought to a rapid end. Pain actually began to lessen during the first application of diathermy to the scrotum. After three applications and the expiration of 10 days there was no pain, no swelling and no tenderness. In two cases only were more than four applications necessary. In many of the cases there remained some thickening of the globus minor but not tender to pressure. A continuation of the diathermy does not seem to reduce this thickening. In no branch of therapy have we obtained results more constant and successful than those following the treatment of gonococcal orchitis and epididymitis by diathermy.

In gonococcal salpingitis, provided that there was no pus or pent-up fluid in the tubes, we were able to abolish the pain and reduce the swelling to a slight degree or render it impalpable.

We have had two cases of *gonococcal iritis*. One of these was early and severe; pain was present. It was quickly relieved by applying diathermy to the orbit. In the other case the iritis was quiescent and there was no pain. It was partly adherent and the ophthalmic surgeon would not perform iridectomy unless we could assure him that gonococcal infection was everywhere extinct. We therefore gave an extra course of diathermy to the prostate and vesicles in order to be sure, as far as possible, that the infection had been abolished. The iridectomy was then successfully performed. There were no sequelae.

We are now confronted by a question of the utmost importance. Will diathermy, in addition to bringing metastasis to an end, free the primary foci from infection? Can we say that the urethra and cervix no longer contain gonococci? Can we say that the gonococcal infection of the prostate and vesicles has been rendered extinct? The final answer to these questions can only be made when a positive test of freedom of the tissues from gonococci has been discovered. Until this long-desired test has been discovered, we must rely on bacteriological evidence, on signs and symptoms and the subsequent histories.

Gonococci, which were previously found in spite of other forms of treatment, disappeared after diathermy and repeated search, at intervals, failed to find them. The examination of the cervix reveals nothing abnormal. On tapping it the fluid which emerges from the os is clear and glycerin-like in appearance. Symptoms, on micturition, when present, disappear after diathermy. In our cases of prostatitis the discharge disappeared though, in some, a morning gleet persisted. Examination of the fluid obtained by massage of the prostate revealed no gonococci although, in two cases, a provocative injection of gonococcal vaccine was made. In two of our cases of gonococcal infection in women the patients married after the treatment and there was no transfer of infection, in one case after 5 years, in the other after nine months.

The evidence therefore favors the conclusion that the infection of the primary foci has been abolished, although it does not prove it. But we can say for certain that diathermy was able to render all evidence negative where other forms of treatment had failed.

We have also treated by diathermy a few cases in which the anterior urethra alone had been infected. In some of these the discharge soon disappeared; in others it disappeared but no more quickly than would probably have been the case if other methods had been used.

We have tried four different methods of applying the diathermy; on two of these the anterior urethra was subjected to the treatment; in two the whole urethra was treated simultaneously. In neither of these methods have we used a bougie electrode for fear of spreading the infection. The bougie method is open to another objection. The distance between the active electrode (the bougie) and the distributing electrodes (which are placed on the back and front of the pelvis and on the perineum) is short in some parts and long in others. The current will therefore be concentrated in the shorter paths and the urethra will not be evenly heated. Attempts have recently been made in France to overcome this difficulty by introducing resistances in parallel between the electrodes with the object of making the paths between the active and distributing electrodes present the same resistance everywhere. This seems to me a task of no ordinary difficulty and I doubt whether an adequate application of diathermy to all parts of the urethra simultaneously, would, at the same time, be an efficient application to the prostate and vesicles.

Conclusions

Our conclusions are the following:

1.—The application of diathermy to the cervix or prostate and vesicles—the gates to metastasis—is a specific for gonococcal arthritis: early cases are cured, and late cases arrested.

2.—Diathermy is a rapid and certain method of bringing gonococcal orchitis and epididymitis to an end.

3.—The symptoms and (usually) the signs of gonococcal salpingitis can be removed by diathermy, if there is no pus or pent-up fluid in the tubes.

4.—All evidence of gonococcal infection of the urethra and cervix uteri in women, and of the prostate and vesicles in men, is negative after diathermy.

Treatment of Tuberculosis with Spengler's Immunblood

By JOSEPH HOLLOS, M.D., Youngstown, Ohio

IN A previous article*, I summarized briefly, under the name of tuberculosis intoxications, the symptom-complexes which are, according to my own investigations, the result of the reaction of the organism, which has been made hypersensitive through lytical immunity. I mentioned that the *Immunblood* is the best specific for tuberculous intoxications.

Spengler's publication on the origin and effect of the Immunblood and of the theory of his bloodcell-immunity called forth a great controversy in Europe and the most contrary opinions. Roepke and Bandelier claimed that the Immunblood was absolutely ineffectual. They did not get any reaction from even the largest doses. On the other hand, other authors proclaimed it to be dangerous. According to them, even the slightest doses could cause high fever and other reactions. The oft prejudiced critics were responsible for influencing physicians—who usually follow the opinion of authorities—to discontinue their experiments.

Many remedies for tuberculosis have appeared in the last seventeen years. The already existing tuberculins underwent many advantageous changes, but the writer has ascertained, after the treatment of many thousand cases, that none of them had the effect of the Immunblood.

Action of Immunblood

The Immunblood is not a toxin as the tuberculins are and, in reality, it is without effect (even in the largest doses), not only on persons without tuberculosis but, very often, in cases of inactive tuberculosis and also in progressive, acute tuberculosis. Why? Because none of these cases has a sensibility which would release the reactions

Clinical Medicine, October, 1925, p. 671.

and therefore they do not show the intoxication symptoms described.

On the other hand, in cases of hypersensibility, one injection of the 1000 million-times dilution is often sufficient to occasion high fever and other universal and focal symptoms, because of its lytical effect, or to control intoxication symptoms; i.e. fever, sleeplessness, torturing pains, etc., because of its antitoxic action. Symptoms already stopped in the course of injections reappear, sometimes, from a larger dose, or pains or other symptoms that had not appeared for a long time—perhaps for years—will be once more produced through stronger lytical effect (absorbing of endotoxins). All these symptoms provoked can be controlled by binding of the toxins with one injection of a minimal dose of the Immunblood.

If we take these facts into consideration and if we observe symptoms and their changes accurately, it will be possible to treat cases individually and cure diseases, the tuberculous origin of which were not even suspected, and we may also heal severe cases of phthisis which are unsuitable for tuberculin treatment.

The immunizing action of Immunblood is passive as well as active. It acts passively because of its antitoxin content, and it is this that makes it exceedingly valuable for treating hypersensitive cases, in whom the intoxication symptoms particularly prevail. The active immunizing power is caused by the absorbing of endotoxins from the dissolved bacilli, produced by the lysin content. Reactions are provoked in the same way. After nearly every reaction, we can note objective and subjective improvement.

Technic of Injections

The treatment begins with 0.3-0.5 Cc. of the Immunblood, dilution No. X or IX*. As reactions can appear any time within 8 or 10 days, we wait at least 12 days before giving the second injection. In case of reaction, we repeat the same dose after all signs of reaction have passed. In case of a very slight or no reaction we raise the dose 5 to 10 times.

In beginning the treatment, the following injections may be given every 8 to 10 days with slight increases:

For example:

1. injection 0.5 Cc. of No. X
2. injection 0.8 Cc. of No. X
3. injection 0.3 Cc. of No. IX
4. injection 0.8 Cc. of No. IX
5. injection 0.5 Cc. of No. VIII
6. injection 0.5 Cc. of No. VII, etc.

It is advantageous to increase the doses but we need not force them. If toxic symptoms reappear from having given larger doses, it is advantageous to go back to the doses given at the beginning. After a treatment of several months, if we get suitable objective and subjective amelioration or if, perhaps, all symptoms have disappeared, we can stop the injections and leave the work of reparation for the organism to finish.

In case the intoxication symptoms reappear after finishing the treatment, as they sometimes do after 4 to 6 months, or even later, we may take this as a sign of a beginning recidive and the treatment should then be repeated. We usually require periodic treatment, as in syphilis, for a final cure.

Naturally, all conditions which help to raise immunity, i.e. rest, hygienic and dietetic treatment, are favorable in connection with the specific treatment. On the other hand, we are able to cure many cases without patients leaving their occupations or making any change in their unfavorable conditions.

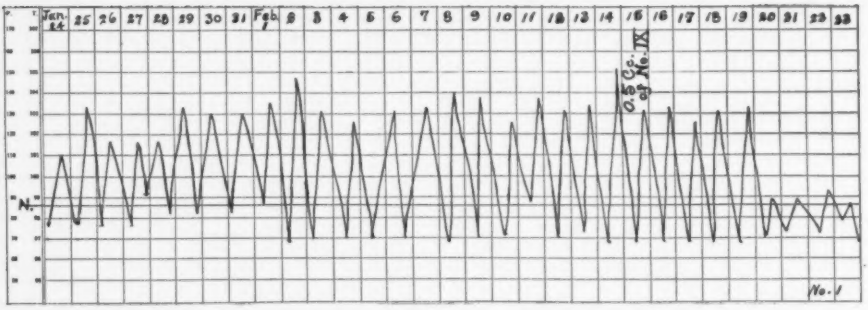
It is advantageous to give some iodine internally, which influences the local process favorably and helps to raise the immunity. The good effect of iodine in other forms of infectious granulomas, especially in syphilis and actinomycosis, is well known. I give mostly tincture of iodine, once a day, in 5 to 10 drop doses, well mixed in a large glass of milk.

Inunctions

In case of great hypersensibility, besides the injections we can apply the Immunblood percutaneously also. The patient himself should rub 4 or 5 drops into the skin of the forearms with his palm every day until it is quite dry. The beginning dose for rubbing-in is the No. VIII or VII and we can gradually raise the dose every 3 or 4 weeks until arriving at dilution No. IV or III.

I also often apply the rubbing-in process between injections. By this method it is usually enough if the patients appear at the doctor's office once in 2 or 3 weeks; therefore, this is the most suitable method for mass treatment in dispensaries. It is important to keep an accurate history of

*Dil. No. I.=10 times diluted, made from the original with 0.5% carbol water.
Dil. No. II.=100 times diluted, made from the No. I with 0.5% carbol water.
Dil. No. III.=1000 times diluted, made from the No. II with 0.5% carbol water, etc.
Dil. No. X.=10,000,000,000 diluted, etc.



every case and also a temperature chart if possible.

In cases where only subjective and functional symptoms are present, one or a very few injections or daily inunctions for a few weeks may often be sufficient. After a successful binding of the toxins, the specific fight of the organism will be localized exclusively in the tuberculous focus or foci; the organism does not take cognizance of this fight and so nothing disturbs the subjective feeling of the patient. In early cases even a short treatment may be sufficient for a final healing to take place in the tuberculous focus or foci.

Treatment in Childhood

Immunblood treatment in childhood is especially important. Children are better subjects for specific treatment, because the granulation tissue is still fresh and less complicated by regressive changes and secondary infections. Moreover, they can be immunized more easily and therefore they are absolutely curable by specific treatment. The neglect of this is as erroneous as the neglect of antisyphilitic treatment of a beginning case of syphilis.

With babies and young children, injections are not necessary, good results being obtained from the use of medium dilutions of Immunblood, administered percutaneously. The older the infection and the more organs affected the longer and the more often the treatment must be applied, just as with syphilis.

The specific cure of tuberculosis of children is all the more important because chronic intoxication during the period of puberty will leave an indelible mark on the entire life, through chronic disturbances in the function of the endocrine glands, retarding or injuring healthy development and metabolism. Unhealthy body development; faulty blood-cell building; defective bone and muscle development; chronic nervous symptoms; diseases of metabolism; irregular process of maturity are results, which can be prevented by systematic specific treatment and, especially, by the use of Immunblood. At the same time the best prevention of consumption is affected.

Case Reports

For illustrating the above, I shall give the history of the following few cases:

(a) Antitoxic Effect

Case 1.—T. L., age 23 years; soldier.

This man lay in the Temesvar (Hungary) garrison hospital, with the diagnosis of neurasthenia, for 3 weeks.

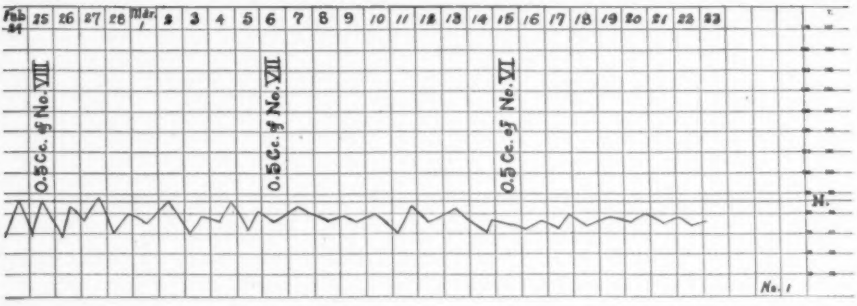
Anamnesis: Patient had headache and dizziness for a year; wakened suddenly frightened; had occasional violent palpitation lasting from one-half to two hours, also severe precordial pain. Had very bad, exciting dreams, from which he wakened exhausted. Tired out quickly. Inclined to sweat; was extremely nervous and excitable. Patient had very marked sensitiveness to cold—hands and feet were always cold, even in summer. He had felt sharp pains in the elbows and knees for the last two years. Coughed in the morning for 6 months.

The patient's father died of consumption 8 years before. His brother was tuberculous.

Present condition: Patient is fairly well developed, poorly nourished, thin, very pale. Pottenger phenomenon (varying resistance on palpation) over both apexes, especially over the left one.

Course of illness: The subfebrile condition, which was present before the treatment, subsided after the first Immunblood injection (No. IX dilution). After the second injection 12 days later (No. VIII), the headaches entirely, and the dizziness almost entirely disappeared. The patient slept more quietly; was less nervous; occasionally felt some palpitation and fatigue, but only in the morning hours. He had a good appetite the last few days.

Night sweats and bad dreams, lasting for 3 days, set in 2 days after the third injection (No. VII) — toxical reaction — otherwise well. Felt perfectly well following the fourth injection (No. VII). Gained over 10 pounds in 6 weeks.



This case is a typical and very frequent example of tuberculous intoxication appearing in the clinical form of neurasthenia.

Case 2: K. T., 6-year-old boy.

Anamnesis: Two years ago he suffered from whooping cough and was feverish for a long time. For the past six weeks he has been in bed with continued fever which rises to 104° F. The patient's appetite is poor and he is ill-humored.

Present condition: The child is fairly well developed; poorly nourished; slightly emaciated; very pale. Over the chest there are no physical finding. The x-ray shows a heavy shadow in the hilus. Pulse is 112; weight 37 pounds.

Course of illness: First injection (Feb. 15) 0.5 Cc. of dilution No. IX. The fever, which on the day before was 105.1° F., was 103° F. for 5 days and fell to 99° F. on the sixth day. The second injection (0.5 Cc. of No. VIII) was given after 10 days; the maximum temperature reached was 99°. After the third injection (9 days later; 0.5 Cc. of No. VII) the temperature remained normal. The child left the bed after the second injection; had a very good appetite; was good-humored; the pulse was 92. He gained 4.5 lbs. in the first six weeks.

He contracted measles in the early part of April of the same year, the deleterious effect of which is well known, because it decreases tuberculosis immunity. In this case, after recovery from the intercurrent disease, loss of appetite was present; pulse was 120; loss of weight was 1.5 lbs. and slight fever, lasting for a few weeks, was noticed. All these symptoms disappeared after a second Immunblood treatment. (See chart No. 1.)

Case 3.—T. P.; age 38 years; female.

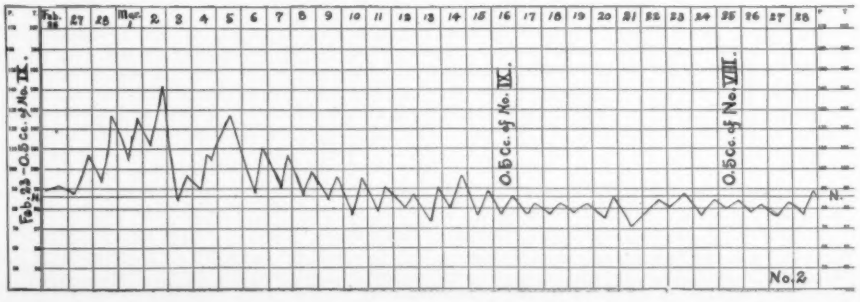
Anamnesis: Patient had palpitation for a long time and had lost about 33 lbs. in the last 3 or 4 months. She complained of great nervousness and sleeplessness. She was continually tired and had no appetite. For two months she had noted an enlargement of the thyroid gland.

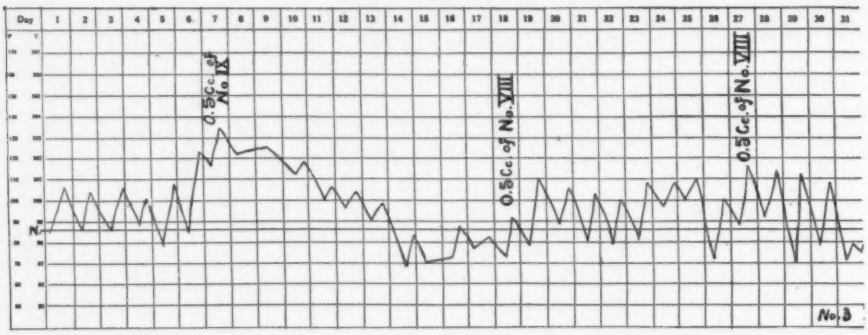
The husband died of consumption 4 years previously.

Present condition: The patient is well developed but very thin and pale. Lungs without any pathological finding. There is a slight exophthalmos with marked Stellwag symptom (apparent widening of the palpebral fissure); diffused, moderate enlargement of the thyroid; tremor of the fingers; pulse 140.

Course of illness: I eliminated all medication which the patient was using (bromides, strophanthus, morphine, etc.) and gave her Immunblood (No. VII—later No. VI) for daily inunctions, which she used for several months. After the 4th day she had a better appetite and slept well. The condition improved from day to day; the weakness disappeared and she was in better spirits. After a month the pulse was 110; the exophthalmos and goiter disappeared entirely. After 4 months the pulse remained under 100; she had gained 23 lbs. and felt very well. After 1½ years she had gained 44 lbs. Two years later there was a recurrence with a slight struma and loss of weight.

In this case we see a rapid healing of an acutely developed hyperthyreosis; and it is remarkable that the patient was apparently cured by the percutaneous application of the Immunblood exclusively.





(b) Lytical Effect

Case 4.—L. U.; 39 years old; male.

Anamnesis: The patient coughed for a year, during which time he had three severe hemorrhages and nearly bled to death. He spat blood every day for 2 weeks and coughed so hard that he could not sleep. He produced much sputum; had vomiting and headache; sometimes dizziness. He sweated in the night; got up very tired and could not work. He had precordial pains and headache; sometimes pain in the extremities.

Present condition: The patient is well developed and fairly well nourished. There are old scars of healed lymph-node tuberculosis on the neck. Over the left apex there is a shortened percussion sound and harsh breathing noticeable. The pulse is 120. He has no fever. Weight 144 lbs. In the sputum there are many lymphocytes. Tubercle bacilli negative.

Course of illness: On February 23 the first injection of 0.5 Cc. of dil. No. IX was given. The patient became feverish after 4 days (100.9° F.). On the next day he felt ill and had chills and temperature 102.7°, which rose, in two days, to 104.2°. He had more sputum and coughed more.

After two days' remission, the temperature rose once more to 102.7°. The patient expectorated excessively. The dullness of the left apex showed an increase in intensity and extent. After that the fever decreased slowly and, 21 days after the injection, it reached 98.6°. The second injection of the same dose was given. There followed 3 days of normal temperature, then a slight reaction of 98.8°. A third injection of 0.5 Cc. of dil. No. VIII was given 9 days later. After 3 days there was a slight reaction of 99°, which was followed by a constant normal temperature. By March 26 the patient coughed no longer; there was practically no sputum; he ceased to feel tired in spite of hard work. On April 14th I noted a gain of 8 pounds; the patient had no sputum at all; no cough. (See chart No. 2.)

In this case we see a very marked reaction, as shown by the high fever and in local symptoms: a more decided dullness, increased sputum and much cough (exudative inflammation around the focus). We could have avoided this by giving the Immunblood percutaneously for a week before the injection and by beginning the injections with the dilution No. X instead of IX. But the stronger reaction had a very good effect and the patient remained without any recurrence for two years, while he was under my observation. He gained much in weight and worked steadily.

(c). Antitoxic and Lytical Effect

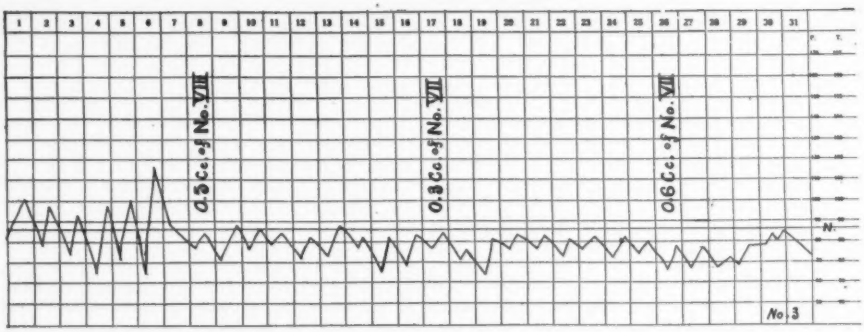
Case 5.—B. A.; boy, 2½ years old.

Anamnesis: He had diphtheria 5½ months ago. After that he was sickly; coughed continually; was constantly feverish and had no appetite. He had nightmares and cried out in the night. He was constipated. His abdomen began to enlarge.

Present condition: The child is well developed; fairly well nourished; exceedingly pale. The abdomen is enlarged and is sensitive to the touch; dullness over the lower portion. At the back, over the lungs, disseminated, slight, dry râles are heard. Pulse is 124.

Course of illness: A day before the first injection (0.5 Cc. of dil. No. IX) the fever was 103.5° F.; the day of the injection, 102.2°; the following day 102.6°. From that time on the temperature fell from day to day and from the sixth day remained under 98.6° for 4 days. The day after the second injection (0.5 Cc. of dil. No. VIII.) the temperature was 101° and remained between 100° and 101°. Nine days later the third injection of the same dose was given. The fever rose to 101.6°, then fell to 100°, and, after again rising to 101.6°, it fell to 98.6° and remained constantly normal. (See chart No. 3.)

The child coughed so much harder after the first injection that he could not sleep for several nights; then the cough lessened and the appetite began to improve. A week after the first injection his stools were constantly normal. After the second injection the abdomen grew larger day by day and one could detect fluctuation. He had pain at evacuation. He again coughed much after the second and third injection. After the fourth injection of the same dose the cough diminished greatly and finally disappeared. The abdomen began to become smaller. After the fifth injection (0.5 Cc.



of No. VII) the child was apparently quite healthy and very lively. He had a very good appetite; gained strikingly in weight; and his face assumed the color of health. The abdomen was still slightly enlarged but without fluctuation, and there was no dullness.

Not long after the abdominal enlargement disappeared entirely and the râles over the lungs also disappeared. The child remained constantly in good health. One year later he received the injections once more to avoid recurrence. It is important to note that the patient was the child of poor parents, the consumptive father living in one room with his wife and four children.

Summary

Concerning this treatment, I summarize my 17 years' investigations of about 15,000 patients as follows:

1.—The latent tuberculosis of children, without exception; and the manifested tuberculosis of the lungs and other organs, in the majority of cases, can be cured entirely and definitely.

2.—The recovery is the quicker and surer the earlier the treatment is begun. In the case of consumption during the age of puberty the problem is more difficult.

3.—The tuberculosis of adults, where consumption has not developed, definitely can be cured, provided the treatment is of sufficient duration. Exceptional cases are alcohol addicts and their children. In these manifested tuberculosis is generally incurable because of the decreased or absent immunity.

4.—The more advanced the phthisis, the less can we rely upon healing, although, at times, a checking of the progress and infectiousness of these cases can be affected through persistent treatment.

Progress in Medical Education

A Report of the Meeting of the Association of American Medical Colleges, 1925 (In Two Parts)

By IRVING S. CUTTER, M.D., Chicago, Ill.
Dean of Northwestern University Medical School

Part II

[Concluded from Jan. issue, p. 17]

Attendance on the City's Sick Poor as a Part of Clinical Instruction

By WM. H. GOODRICH, M.D., Augusta, Ga.
Dean, Medical Department, University of Georgia.

WE USE the outpatient department for teaching purposes and as a feeder for the wards of the hospital. The sick poor are under the care of socalled city physicians, and these city physicians are under the control and appointment of the school.

We have considered, for a number of years, the possibility of utilizing the field of activity of the city physician for teaching purposes, realizing that additional clinical facilities would be obtained and that the scope and possibilities of this new departure were considerable.

A tentative program arranged for this session has now been in operation six weeks. Apparently, it is working satisfactorily and is meeting with the unqualified endorsement and enthusiasm of the students. The fourth-year students are divided into three sections, each section rotating

every eleven weeks, that is, a medical, a surgical, and a specialty group.

The medical and surgical sections work in the afternoon in the outpatient department, while the specialty section visits the sick poor in their homes. A clerk in the hospital receives all calls from the sick poor, and notifies the particular city physician from whose district the call comes. The city physician visits this patient and examines him, offers some form of treatment and then advises that he will send out a young physician who will examine him further. He explains the importance of further investigation, together with the great advantage and necessity to the patient of a complete physical examination, a history and laboratory test.

The students are sent out in rotation. They visit the patient at his home, make a careful physical examination, take the history, and collect specimens of blood, sputum, urine; come back to the hospital, complete their laboratory tests and file their record. A special room has been set apart in the hospital as a record room for this purpose and for conferences. In most instances, the student is largely left to his own initiative in these cases. He visits the patient daily, but he is carefully checked and supervised in his work. Two city physicians were elected last June for a period of one year. They are two of our graduates who have served two years in the hospital as interns. These two men, each morning, go to this record or conference room, review and criticize the work that has been done by the students and write out any criticism or suggestions as to further investigation or management on a small slip and attach it to the record.

In most cases the student is allowed to continue the handling of the case to its natural termination. If a case does not progress well, or if there is any doubt as to the diagnosis, the instructor again visits the patient in consultation with the student. In the event of a very serious illness, either the patient is brought into the hospital or a consultation of the head of the department, the instructor or city physician, and the student is arranged for at the patient's home.

There is no question as to the value of the outpatient department so far as the education of the student is concerned. In some respects it has advantages over ward teaching. So far as the onset of the symptoms is concerned, we know that cases are seen, as a rule, much earlier in the dispensary than in the hospital, and the student really has no opportunity to study these early symptoms of disease except in the outpatient department.

We feel that this new department, if it can be carried on successfully, gives the student not only an opportunity for studying disease in the beginning, but it also offers him an opportunity to learn something of the environment of the patient, something of the economic and social aspects of the case, which means so much in rounding him out as a general practitioner.

We must realize that the output of the average medical school is not a finished product. The recent graduate is acutely conscious of this and he feels that he lacks something which his previous clinical training and teaching did not give him. He feels that he is not prepared to take up his career as a general practitioner immediately and confidently.

Impressions of Medical Teaching Gained from Ten Years' Experience with National Board Examinations

By J. S. RODMAN, A.B., M.D.,
Philadelphia, Pa.
Secretary, National Board of Medical Examiners

Since the organization of the National Board (1916) the percentage of failures in Part I has been a little over 20 percent. The Board's candidates have fared much better in the clinical subjects of Part II than in the fundamentals of Part I. This result is to be expected, of course, since the subjects of medicine, surgery, obstetrics and gynecology and public health are under less controversy in medical education and therefore the instruction, perhaps, more uniform. Again, most students expect to actually practice medicine and these subjects in their clinical training dealing with the patients make to them the greatest appeal. The percentage of failures in Part II has been a little over 11 percent—only slightly more than half of that in Part I.

As these same subjects are examined on in the clinical and laboratory examinations of Part III, impressions growing out of the results apply to both of these parts.

In medicine the candidates have shown more proficiency in memorizing facts concerning disease in general than in the demonstration of the application of this knowledge on the patient. Medical schools vary in clinical resources and naturally the

Board finds that candidates coming from schools in the larger centers have had more clinical training and are, therefore, more proficient as a rule in showing it. This applies with equal force to surgery, and obstetrics and gynecology. In surgery the Board believes that, as a rule, too much attention is paid to regional surgery and too little to surgical principles. In this examination, no attention, or at least very little, is paid to technic since the Board believes, as of course you do, that this is more a matter for graduate study than for undergraduates.

The Board hopes that candidates will show, in the future, more understanding of such fundamental things as wound healing, inflammation, fractures and dislocations, and less about brain tumors and thyroid surgery.

Instruction in Public Health

One of the interesting developments of recent years in medical education has been the decided improvement in instruction to undergraduates in Public Health. This subject has always loomed large in importance to this Board, the examiners having been from the start the Surgeon General and one other from the U. S. Public Health Service. The comment of one of these examiners will bear repeating. In answer to a letter inviting his comment on this question he states, "I suppose it is a little hazardous to generalize, but I have the feeling that there has been very material improvement in the Public Health papers during four or five years in which I have been preparing the questions and grading the answers. When I began this work, it was somewhat difficult for me to frame questions that would not grade the majority too low. I have no difficulty in this respect now; indeed the majority of the men do very well in the examinations."

Total number examined by the National Board—2578.

1773 in Part I—(pre-clinical).

900 in Part II—(general medicine, surgery and midwifery).

415 in Part III—(clinical).

Value of the Seminar in Medical Education

By G. CANBY ROBINSON, A.B., M.D.,
Nashville, Tenn.
Dean, Vanderbilt University Medical School

My idea of the seminar is that it is a gathering of graduate students interested in a particular field with the professor or one of the senior members of the department as the chairman but with the students participating in a rather informal discussion.

The seminar is usually built up about a topic which is assigned to the student who acts as the leader. Now, in that sense, I know very little about it and have had no definite experience. I feel, however, that we are, particularly in clinical teaching, approaching the seminar method when we divide classes into smaller groups; when we introduce the preceptorial or advisory system, and when we attempt to teach by discussion.

As a student, I look back with a great deal of pleasure and appreciation to the evenings that we used to have at Dr. Osler's house. He devoted his Saturday evenings all through the year to the group of students who were at that time on the medical wards, and it was one of the most valuable and telling experiences in my own medical education. We would sit around the dining-room table and he would discuss for the first part of the evening various topics on the history of medicine, and then take each man in turn and give him an opportunity of bringing out any points of special interest that had come up during the week or any problems that were particularly on his mind. It was a very delightful seminar, conducted in such a way that all the students of the group participated.

It is, of course, necessary for the seminar method to have small informal groups, and certain important educational functions can be carried on in these groups which cannot be carried on in larger gatherings. For instance, I am sure many of the students in clinical medicine carry with them confused or hazy conceptions, and it is necessary that those conceptions should be cleared up.

One other idea that has come to my mind in regard to the use of the seminar is the cultivation of what seems to me to be a very important educational factor that does not show in the curriculum; namely, the factor of what I like to call auto-education. I am sure that students do educate each other very definitely, particularly if they are given an opportunity of meeting together informally and have an opportunity of arguing and discussing various phases of their work.

The Teaching of Biochemistry

By DR. CHESTER J. FARMER, Chicago, Ill.
Professor of Biochemistry, Northwestern University Medical School

In entering upon the study of biochemistry, the student finds, frequently to his surprise, that the fundamental principles of chemistry and physics presented during his premedical years are the important ground work upon which he now must build his understanding of the life process. To safeguard him in his preparatory work, the Association of American Medical Colleges has wisely specified minimum requirements in the field of general science as well as in certain cultural subjects. Although the minimum for chemistry is fifteen semester hours, the student usually presents twenty or more.

An indispensable adjunct to the study of biochemistry is an understanding of such simple mathematical operations as percentage, ratio and proportion, and the use of logarithms. It is impossible to cast a course in biological chemistry in any stereotyped form. Individual variation is the life of the science. It is, therefore, not the quantity of material presented that is of importance, but rather that which is wisely selected and efficiently taught.

The instruction in the course is usually given by means of lectures, laboratory work, and the written or oral quiz. In addition, a student must become acquainted with the literature of the subject by suitable reference work. Such a course should be graded, with emphasis upon the daily work and the frequent short test; the final examination counting for not more than thirty percent of the grade.

The use made of the lecture hour, or the abuse to which it is put, is an excellent indication of the value of the course as a whole. The lecture is of value in leading the student safely through a new and difficult process of thought. He should receive from the lecture not only the desired information but a stimulus to answer for himself the many questions suggested by the discourse.

Laboratory Courses

The laboratory course should be arranged to support the lectures whenever possible. It should employ precise quantitative methods with a minimum of qualitative description. The laboratory instruction can be given satisfactorily only by a judicious use of laboratory manual, textbook and instructor's time. The student uses the laboratory manual as a guide to procedure; the textbook forms his compend to tell him "what it is all about"; while the instructor serves to guide him in his search for information and the use of his time. In applying this method, the student is first required to gain a concept of the objective sought, to be later confirmed or modified as the result of experiment. This plan leaves with the student the major responsibility for his progress. It is a dangerous practice, entirely foreign to the spirit of modern pedagogy to so completely fill a schedule that the student is denied time for reflection. Time is needed to clarify his ideas. He is entitled to learn of his progress in the science by the trial of a few simple problems of his own.

Certain subjects, as calorimetry and blood analysis, can best be taught in small sections. Here only the underlying principles should be presented by the instructor. Abstracts from the literature pertinent to the work should be given by the student in an informal seminar. Such a course neither needs nor should carry a final examination, and is invariably a pleasure to conduct.

If successfully conducted, the course in biochemistry serves the student of medicine by interpreting to him the physiology of the normal and the pathology of the diseased. It indicates to him that the great advances to come must be made by an application of physical and chemical technic and methods of reasoning.

The Claims of the Fundamental Subjects in the Curriculum

By WILLIAM KEILLER, F.R.C.S. (Edin.), Galveston, Texas
Dean of the College of Medicine, University of Texas

The general feeling seems to be that teaching is beneath the dignity of heads of departments; that, as soon as a man becomes a full professor, research and research only is worthy of his attention. And to this are appended as corollaries two minor propositions; viz., (a) that the chief end of the subordinate staff is research, teaching being an incidental, laborious, uninteresting duty, to be got rid of as easily as possible; and (b) that any student with a suitable premedical training should be able to get his medical training by himself, given books and laboratory facilities, with only occasional aid as he may ask for it, and still further (c) that, if any man show traces of an original, inquiring mind, he should

be directed into research channels at the expense of the time necessary to master the enormous amount of accurate knowledge amassed by previous workers and made conveniently available in textbooks and laboratory guides.

Knowledge and Love of Truth

Two things we should be able to teach in our laboratories; viz., a reasonable amount of carefully selected scientific knowledge, together with some comprehension of the methods by which these facts have been acquired, verified, sifted out; and a sincere love of truth for its own sake. Of course, this presupposes the right kind of student material. No man can plant reverence for truth in the soul of the man who constitutionally loves a lie, or fears the truth; and, unfortunately, judgment and discrimination come late, and, to many men, never in any appreciable amount. Knowledge comes early; wisdom late; but wisdom presupposes much knowledge as one of the constituents of the ground from which it springs.

And let us not forget that, if he be the right stuff, with the right fundamental training, all the rest of the doctor's life furnishes a research field in clinical work; every case, a research problem; while the freshman-sophomore years are the only chance in all the life of the average doctor when he may get a systematic broad grasp of the fundamental subjects by actual laboratory study.

Seldom does a man come to my laboratory of anatomy without having impressed on him by a doctor friend the importance of becoming thoroughly grounded in anatomy. Why? Because every day's experience begets again, in the physician's or surgeon's mind, the wish that he knew more anatomy. And I suppose most earnest young doctors resolve to come back to college and review anatomy. My laboratories are open to every doctor in the city and state, but I could count on the fingers of one hand the men in the city who, in the past thirty years, have reviewed their anatomy in my dissecting room, or combined a month's daily laboratory work in the mornings of a summer holiday with the evening's attraction of surf bathing. Still more is this true of the other fundamental laboratories.

It is an amusing and popular pastime for those who know nothing about teaching to write destructive criticisms of school and pedagogical methods. Even Mr. H. G. Wells, with his wonderful general grasp of world history, has his fling at public school methods. But I do not find anything in the way of constructive suggestions.

By present-day methods we do not educate in school or college, I grant you. All life, well used, is education. In some it begets learning and, in a few, wisdom; but the school and college years afford invaluable opportunity for acquiring the legacy of the ages in ascertained facts. Let us help our students all we can to make the best possible use of their all-too-limited time in acquiring the information on which they may build safely lives of intelligent and skilled service to suffering humanity.

The General Plan of Teaching Bacteriology at the University of California

By DR. K. F. MEYER, San Francisco
Professor of Bacteriology, University of California

The general plan of teaching bacteriology at the University of California Medical School may be outlined as follows: The course extends over a period of 16 weeks and occupies four whole afternoons, with four hour lecture periods.

In a general way, the subject is conceived as the natural history of infectious diseases, treated from a clinical and from a public health point of view. The latter conception is readily impressed on the student by pointing out how a mistake in the clinical diagnosis of an infectious disease, unsupported by a laboratory examination, may result in an extensive and fatal outbreak and that, besides the medical attendant and the patient, the third factor—the general public—must be considered.

Clinical Bacteriology

This conception, by no means new, begins with the study of a bacterial disease at the bedside; reviews the clinical aspect of the patient; the diagnostic laboratory procedures and their interpretation; the biologic treatment, if any, in the light of the immunological reactions; the communicability of the malady; and, finally, the direct and indirect preventive measures which are commonly practiced. In other words, a student is shown that the study of the microorganisms in their relation to disease, in fact the work of the bacteriologist, begins at the bedside, passes through the laboratory and ends again with the patient or in the community. Furthermore, it is emphasized that the bacteriologist specializes in the laboratory study of *patients* in cooperation with the physician. He must,

therefore, instruct himself by correlating what he finds in the laboratory with the clinical signs and symptoms of the patient.

The purely scientific part of bacteriology is not overlooked but bacteria are treated not so much from the standpoint of what they are as of what they do.

The object just outlined is attained by means of lectures, demonstrations, practical laboratory exercises, assigned problems in infection and immunology, theses on preventive medicine and occasional field observations. In the lectures, profusely illustrated by lantern slides, the student is systematically acquainted with the symptomatology of the disease; the mortality and morbidity statistics; the bacteriology of the causative organism; its pathogenicity as tested by experimental pathological methods; the pathogenesis in man; the mode of transmission and epidemiology; the clinical and public health laboratory diagnosis; the natural and the artificial immunity; the diagnostically important immune bodies and their reactions; prevention and control.

The illustrations, as a rule, cover the following subjects: characteristic temperature curves, vital statistics, important clinical lesions and significant macroscopic and microscopic postmortem findings, epidemiologic data and administrative material which demonstrates the practicability of community protection by vaccination or other preventive measures. Abundant data supplied by the State Board of Health and the State Hygienic Laboratory are used freely in this connection. The principle that every statement or generalization is open to direct or indirect experimental proof is followed in the selection of the illustrations and the preparation of the demonstrations.

In the course of the lectures and throughout the regular laboratory exercises, the student is furnished with references to recent publications on the subject under discussion and he is encouraged to broaden his knowledge by collateral reading.

Less Lecturing—More Work

It is the ultimate desire of the staff to eliminate systematic lecturing, and to assign to the students printed abstracts of the lectures which are now in the course of preparation. Time allotted to lectures can more profitably be devoted to critical reviews or in conferences with small groups of students. Complicated immunologic phenomena are demonstrated by special papers or experiments which are prepared and presented by one or two students. Every experiment embodies a number of fundamental principles and the technical execution is left to the ingenuity of the workers.

In order to economize in time and material, a brief outline with comprehensive references is supplied. The student is shown that without an adequate knowledge of the historical and theoretical facts it is impossible to comprehend the purpose of the experiments and to plan intelligently the intricate tests which are required to solve the problem. Before the student begins his experiments, he must submit an outline for review and criticism. When he has demonstrated his findings he files with the instructor or the librarian a paper which embodies in a critical form the results of his investigation together with a complete and accurate bibliography. The reports are on file in the library in order to enable the members of the class to make abstracts in case they failed to take notes while the paper was presented.

During the regular laboratory exercises, the students work consecutively and repeatedly with such essential morphological, biochemical and serological methods as are commonly used in the clinical and public health laboratory diagnosis of infectious diseases. Significant biochemical or physicochemical phenomena, which may help to explain the theoretical background of a procedure, are demonstrated or discussed in papers assigned to and prepared by students. Emphasis is placed on the careful clinical observation and the systematic autopsy of experimental animals.

Practical Problems

The value of assigned papers has been tested with a great deal of success. Early in the course, twelve hypothetical epidemiologic problems are distributed. The students are required to find in the literature the information which enables them to submit by the end of the semester a well-written exhaustive and critical thesis. Among the thesis problems thus far assigned, the following two are representative of the character of the questions involved:

Problem 1: In a Northwestern city with a low mortality rate, the physicians report to the Health Department, in the course of a few days, approximately 75 cases of a disease with the following symptoms: headache, malaise, fever with definite remissions, lenticular spots on skin, loose evacuations, leucopenia, positive diazo reaction of the urine. A large proportion of the

cases occurs among women and children and the death-rate is very high. The water supply is perfect. How would you diagnose the disease by bacteriologic and serologic methods? How would you determine the source of infection? What food would you suspect? How would you proceed to prevent further cases from the same source and how would you prevent contact cases? Consider in detail the various possibilities from an epidemiological, bacteriological and immunological point of view.

Problem II. A physician is called to see a hunter living in Monterey County. The patient has a high temperature, severe headache; is very weak and sometimes irrational. His right axillary lymph-node is very painful, hard and imbedded in periglandular edema. What disease does the physician suspect? What steps does he take regarding this case? How does he treat the case? What public health laboratory and control measures will be instituted? How did the patient contract the infection? Discuss the subject in the light of California conditions.

Protozoology has been eliminated from the instruction and is now taught in connection with medical zoology during the second half of the second year. The first three weeks of the course are devoted to a brief consideration of general microbiology and technic. Little time is devoted to the preparation of culture media since it is a common experience that students with a knowledge of biochemistry can easily learn the necessary technic. Physicians nowadays are rarely called upon to make their own cultures, while those specializing in bacteriology will learn the value of properly prepared media in the advanced courses provided for this purpose.

The Irregular Student in the Medical School

By B. C. H. HARVEY, B.A., M.B.,(Toronto), Chicago, Ill.

Dean of Medical Students, University of Chicago

In the medical courses of the University of Chicago, irregularity has been due to three causes; illness, special study and gainful outside work for self-support.

The irregularity due to special study is happily increasing in frequency and importance. The better preparation of our students has given us larger numbers who are capable of special study. The more thorough organization of medical schools in closer association with universities has given our students more contacts with investigators, has suggested to them special lines of interesting and promising work and has given them facilities and opportunities of doing it. We are all interested in encouraging such tendencies and in helping inspired students to follow up their interests. As a result of such work, last year, sixteen of our students were given the degree of Master of Science and sixteen were given the degree of Doctor of Philosophy in the socalled medical sciences. They had become irregular in their progress toward the M. D. degree, waited over for special study and carried it far enough to attain these degrees. About fifty others had done special work of lesser amount.

Of 209 students who went into the clinical work of the third year during 1924 and 1925, 143 had done more than the required minimum of work, and the average amount of extra work per student was 2 majors, that is, an excess of 11 percent. Nearly all these Masters of Science and Doctors of Philosophy will finish the medical course, though some will devote their lives to special work in anatomy, physiology, biochemistry, Public Health, or some such lines of medical science. Whether they finish the medical curriculum or not, these students are likely to contribute to the progress of medical science by the special knowledge and intellectual power which they develop, and the spirit which spreads from them.

The quarterly system, established when the University was founded, has given us considerable freedom to adjust the programs of irregular students and to encourage inclinations toward special work. I hope we may be able to use our opportunities better in the future than in the past and by increasing the freedom of elective work progress toward the best interest of the student and of medical science.

Students Who Work Their Way

The irregularities due to gainful outside work for self-support appear in a large heterogeneous group of students which gives us some anxiety. The study of medicine is so great and exacting an undertaking that it may well absorb all the physical and mental energies any student can bring to it, but the conditions under which many students undertake it make outside work a necessity. Some facts in our institution are as follows:

In the preclinical courses last year, ninety-seven did no outside work; ninety-one did gainful outside work. Did their

study of medicine suffer? Judged by scholastic grades it did, but not much. The grade point average for those not working was 3.54; for those working 3.37. Among those working, some fifty-four earned more than a quarter of their expenses; their average was 3.21. Thirty-seven earned less than a quarter of their expenses; their average was 3.58. This group, whose members did a small amount of outside work, had the highest scholarship standing of any group.

Appointment on the faculty of Rush Medical College is some evidence of success in the study of medical science. I have inquired of each member whether or not he was engaged while a medical student in gainful outside work for self-support. Of the Junior members of the faculty (those below the rank of assistant professor), sixty-two worked outside while students; forty-two did not. Of the Seniors (professorial members), thirty did such outside work while students; forty-one did not. Although conditions in the medical schools of a generation ago were probably less exacting than in those of today, it is interesting to note that the majority of those students who progressed in the after years to the greatest success were those who did no work outside, but who were free to give all their energies to the study of medicine.

There is, however, a large minority in the professorial ranks who have worked their way from the beginning. Some of these have given the most distinguished service. They have been inspiring teachers, great physicians and devoted workers for the best in medicine. They surmounted obstacles, and the effort gave them strength and some at least were not prevented from becoming great men. But they are a minority. Even though the best group of students were those gainfully employed, and even though most of the younger men on the faculty were those who worked outside while students, the majority in the higher ranks did not do such work. This shows clearly that outside work has prevented many from achieving the greatest success, but that it is not incompatible with a considerable measure of success.

Summary

As a result of this study the following conclusions seem to be justified:

1.—The case of each student whose work is irregular must be considered individually.

2.—The irregularity that is due to special interest in some field and to special study and investigation in it should be encouraged. This is an attitude of mind which is precious for medical science. Such students should be encouraged to work where they want to and when they want to, and still find it possible to complete the medical course somehow. Requirements should be adjusted to their desire to do special work, and their efforts to do it should have precedence over anyone's desire that they arrive on schedule time at any way station, even the one marked by the M.D. degree.

3.—The irregularity due to gainful outside occupation injures the medical development of some of the best students, and some of the best are engaged in it. Students seem to be of three classes: Some are pathetically incapable of studying medicine and doing outside work at the same time. In considering these we may well keep in mind the statement of Billroth concerning the impecunious medical students in Vienna. The effort "to transform stupid, ignorant, starving students into stupid, ignorant, starving physicians" is not worth while. There are many steady, sound, matter-of-fact, serviceable people, for whom outside work is not always harmful. They may be better for it. They may become more sympathetic physicians, of sterner human quality. But there is a third class of students. They are fewer in number but of brighter promise, namely, those few who develop a great serious purpose and who devote their lives to its pursuit.

It seems clear that one of the greatest services we can give is in detecting, early, students showing any promise of intellectual power and independence, in judiciously encouraging such students, financially, by loans, by the award of fellowships and scholarships, by giving them assistant teaching positions or laboratory positions along the lines of their work, and by guarding them against the ambitious tendency to overload themselves with work. By reducing the amount of school work for which they register in addition to outside work, we may preserve their health, prevent the staleness that comes of prolonged and constant effort, and encourage the mental freedom that plays around work and explores the vistas it discloses.

The Role of Irradiation in Focal Infections and Obstructive Deafness

By IRA O. DENMAN, M.D., F.A.C.S., Toledo, Ohio

FEW discoveries in medical science surpass in importance the fact that the pharynx is the origin of most ear affections. Otology has made its greatest strides since Hans Wilhelm Meyer of Copenhagen, in 1874, discovered adenoids. This was the nucleus of our present-day knowledge of exogenous otitis media.

As a matter of fact, the socalled adenoids, or Luschka's tonsil, which are ordinarily removed for the relief of both nasal and eustachian involvement, are only one portion—the largest, it is true, but only a portion—of the mass of lymphoid tissue which is to be found in hypertrophic conditions. The removal of adenoids (socalled) relieves most cases and is sufficient in others to entirely eradicate aural disturbances, either suppurative or acoustic, but otologists know that in many cases surgery alone has failed to clear up the otological pathology. The reason for that can be explained by briefly referring to the anatomy of the angle of the pharynx and the pathological changes to be found in those cases which do not yield to surgical intervention alone.

Anatomy

Rosenmüller's fossa is an anatomical area which authors have practically ignored, anatomically, physiologically and pathologically. It is, so to speak, "a desert isle"—an undiscovered territory. When seen by the aid of the pharyngeal mirror, it appears as a slight depression, oval in form, its longest diameter nearly vertical and situated behind the posterior rim of the eustachian orifice, forming the recess or angle of the pharynx between the lateral and posterior walls. The true anatomical formation of this fossa was a surprise to me, and has modified my opinion greatly as to its importance. The depression which we see with the mirror is merely the orifice of a conical cavity, one-half to three-quarters of an inch in depth, extending along the posterior wall of the eustachian tube—a blind pouch, with the apex outward, nearly opposite the isthmus of the eustachian tube. In the orifice and dotted all over the inner surface of the fossa is found adenoid tissue, which, in conjunction with the swollen and thickened mucous membrane in inflammatory states, retains within the cavity mucus, and, when infected, a mucopurulent secretion.

This deep recess or cavity becomes a veritable cesspool for infectious material, and is the very last portion of the pharynx to clear up after an inflammatory process has been present. After all other structures are free, clear and dry, Rosenmüller's fossa will still be found loaded with mucus and mucopurulent material.

During this period the patient is almost invariably annoyed by occlusion of the tube, tinnitus and slight deafness. Catheterizing shows, by the auscultation tube: first, a muffled sound, with much bubbling of mucus; and then a clear free passage of air only if the tube opens. After a few minutes, or perhaps immediately, the tube is closed again and the patient is as uncomfortable as before.

The reason for failure in such cases is apparent. The tube is closed, not from trouble within the tube itself so much as from its posterior wall being pushed forward against the anterior wall by the pressure of a swollen, edematous, infected pouch behind the eustachian tube—the fossa of Rosenmüller. Thus, the occlusion is the same as when one steps upon a garden hose and the flow of water is interfered with. A continuation of this condition results in a chronic thickening by hyperplasia of tissue, so that the tube is permanently narrowed or occluded, which leads to otitis media and deafness.

I am convinced that the usual procedure in treating these cases overlooks a most vital area. Too little attention is given to clearing away the source of the inflammatory condition. The almost routine treatment of eustachian obstruction, occlusion, tinnitus and catarrhal deafness is some superficial spraying or swabbing of the nasopharynx, which seldom penetrates the Rosenmüller fossa; then inflating the tube, perhaps followed by pneumo-massage of the tympanic membrane.

I need not state that the period of treatment in chronic cases is often long and discouraging to both the patient and physician. Failure is too often the result, and the patient drifts away from one office to another. The tube continues to close, and

exaggerated pneumo-massages, often prolonged unduly in sheer desperation, render the drum membrane thin and flaccid, thus actually lowering the acoustic function. And worse than all, as time goes on, the case passes into the chronic, adhesive type, and a degree of deafness is reached which cannot be cured.

Rosenmüller's fossa and the entire course of the eustachian tube must be made free from external pressure and be rendered clear and dry. The difficulty of thoroughly accomplishing this lies in its inaccessibility, and it is my belief that, in those cases which resist all forms of treatment, the cause of the closure lies beyond the reach of all surgical instruments.

The Use of X-Rays

While radiation affects favorably the entire nasopharynx, its results therein may be compared with surgery and other methods of treatment. However, there is an area between the nasopharynx and tympanic cavity where no surgical instrument can reach, and no topical application can be made. Radiation, by reason of its unlimited degree of penetration and its action in dissolving lymphoid tissue, produces beneficial effects which are not comparative. It would, of course, be elementary to more than allude to the remote aural disturbances, both auditory and of an infectious character, resulting from the prolonged mechanical closure of the internal auditory canal, viz., the eustachian tube.

In the discussion of this subject I shall give consideration to the following modalities: the roentgen ray and the actinic ray (also referred to as the ultraviolet ray); the latter in both its concentrated and its diffused form. In speaking of infection we must limit ourselves, for want of space and time, to those of a chronic nature only, since acute infections cannot be easily classified.

The application of this form of therapy can be divided into two distinct groups: the location of the focus of infection and the elimination of the same, thereby keeping the patient free from absorption of toxic matter; while the second group, which makes up by far the greater variety of cases, would confine itself to the restoration of diseased tissue to a normal state. Likewise, we would have to take up under this group the methods of restoring circulatory abnormalities to their physiological condition.

The researchers dealing with focal infection have shed a special light upon the diseases of the upper respiratory tract. It is very logical that this area should receive special attention, since we are constantly subjected to infection by the air which surrounds us. Assuming that this conception is logical, it is even more apparent today than in former years. With the advent of pure food law enforcement by federal, state and municipal governments, much of the systemic infection, which owes its origin to contamination of foodstuffs, is eliminated. The same may be said of water supply, as is evidenced by a decline of typhoid fever, malaria and other infections which prevailed during the reign of the open wells. While the danger of these two sources is constantly decreasing, there is a growing danger from air pollution, greatly augmented by the increased density of population found in our larger cities. Still new infections appear daily. Our street cars, our public halls, our theaters and gathering places, such as schools, are all adding the possibilities of such infection.

Upper Respiratory Infections

The structures most concerned in infection of the upper respiratory tract are the faucial tonsil and the socalled adenoids, the central mass of Luschka's tonsil. Bacterial infection here finds lodgment and is swept into the blood and lymph circulation.

Much good has been accomplished in a large percentage of cases by a clean tonsillectomy; in fact, so many have been cured that there has been a tendency to rush all patients having tonsillar infection to the hospital and extirpate the tonsils. However, statistics show that there is a certain percentage of tonsillectomized cases who have not found the relief which was sought and expected, and this has led to a serious consideration by the author to look beyond the tonsil for the reason.

Many cases present a nodular throat and the entire walls show a diffused infection which persists after the tonsils are removed. Nodules appear upon the posterior pharyngeal wall in the posterior pillar, the base of the tongue, the lingual tonsil and the fossa of Rosenmüller. Much of the lymphoid tissue presents a similar structure to that of the tonsil, showing crypts and follicles. After a tonsillectomy, in such cases, the infection in these surrounding structures frequently persists for only a few months, and in others it continues to persist and carries on the patient's trouble, showing that the

removal of the tonsils in such cases is not adequate for the solution of the problem. Probably the patient has been promised by the attending physician and laryngologist who operated complete relief following the operation, but disappointment is the result.

These considerations lead me to suggest that in such cases our nomenclature should be revised, and instead of speaking of tonsil infection we should include all of the area and refer to it as infection of the upper respiratory tract, of which the tonsil is, in many cases, only a portion. Yet, the tonsil is practically the only structure that can be entirely removed surgically. If such cases are completely cured, it is accomplished by the act of nature in the following manner: the tonsil being the largest structure, it therefore carries the most infection, and in such cases it constitutes the overload. Its removal allows the patient's system to rally to the point where his own resistance can conquer the remaining infection and clear it up, in time.

In the cases which do not recover after an operation, there is still an overload remaining, and nothing more being removable surgically, they drift from bad to worse; the arthritis continues; the cardiac disturbance goes on; and they still suffer from malnutrition, poor appetite, etc., and, in aural cases, resist all forms of treatment.

The focus of infection in the upper respiratory tract, be it in the tonsils or elsewhere, is caused by an over-production of lymphoid tissue which covers up and closes in, as it were, an area which has become infected; and the continuation of the effort which nature makes to eliminate this infection builds up lymphoid tissue still higher and thus holds the infection deeper. The toxic matter escapes into the circulation of both the blood and lymph streams.

Treatment

Our first problem, then, is to eliminate the focus of infection. This I do by x-ray. It has been known for more than fifteen years, and admitted by those familiar with the x-ray, that under its influence lymphoid tissue will shrink. For more than fifteen years hospitals have referred their cases of lymphosarcoma, Hodgkin's disease and leukemia to the x-ray department, which has been able, in practically all cases, to at least prolong the patients' lives, if not to cure.

The use of the x-ray in eliminating lymphoid foci is by a minimized dose, and must be employed with correct technic. The dose must be lower than an erythema dose, so that it does not affect any other cell; and that can be, and is being done. The fact that the lymphoblasts and lymphocytes are the easiest of any cell to destroy by the x-ray makes it possible to give a dose large enough to destroy them but not large enough to damage any other cells. When the root cells are destroyed and the lymphoid tissue is no longer formed, then immediately begins the absorption of the devitalized tissue by the blood stream. As the absorption goes on, the focus comes nearer and nearer the surface, and finally the walls of the focus itself are broken down so that there is no more a cavity but an open facet remaining which cannot retain infection. This process holds true with the tonsil as well as with surrounding lymph nodes, and the hyperplastic lymphadenoid tissue causing eustachian occlusion.

The x-ray is not, however, directly bactericidal, although it does raise the resistance to infection locally. Therefore, some other agencies must be employed to destroy bacteria in order to insure the patient's recovery. Here we introduce the focalized or concentrated ultraviolet ray, which, when directed upon the surface of the infected area, is bactericidal. Its only limitation lies in its slight penetration, said to be not more than two millimeters; therefore, only the surface and tissues to a depth of two millimeters can be sterilized. But, as the shrinking goes on, by the alternate or preceding use of the x-ray, sterilization can be carried deeper and deeper until finally the entire focus, down to the tonsillar capsule and the fibrous tissue, is not only eliminated but sterilized in its entirety.

I do not believe it necessary to make any extended argument in favor of the bactericidal qualities of ultraviolet ray. There is a wealth of literature upon this subject and many investigators are supplying proofs from their laboratories each year.

Contrary to the action of the x-ray, the actinic ray is not destructive to any living body cell; therefore, it constitutes a valuable adjunct in bactericidal treatment. It destroys bacteria and does not injure any surrounding tissue which a chemical or cautery might do.

Having destroyed the focus of infection and thereby eliminated the invasion of toxic matter into the blood stream, and destroyed the germs upon the surface and within the

Fig. 1.

focus as we have done, our attention can now be turned in another direction—the restoration of individual health.

The influence of ultraviolet irradiation upon body metabolism is equally well established, as are the other foregoing propositions that have been considered. The Bureau of Standards has also established that patients irradiated with the air-cooled ultraviolet lamp show marked metabolic changes, especially in the blood count. The advantage, therefore, of the ultraviolet body ray to a patient suffering with toxemia is apparent. The red corpuscles are increased, thereby augmenting oxygenation. The hemoglobin percentage is raised, and, of great importance in toxemias, the calcium content of the blood is raised, and, according to authorities, is fixed by actinic radiation.

Fig. 2.

Technic

As has been indicated in the foregoing, the objects sought in the treatment of obstructive deafness and aural suppurations are first: the patency of the eustachian tube as a prerequisite for the ventilation and drainage necessary for the elimination of any suppurative progress; and also, in the case of acoustic disturbance, the equalization of intratympanic air pressure to that of external auditory canal atmospheric pressure.

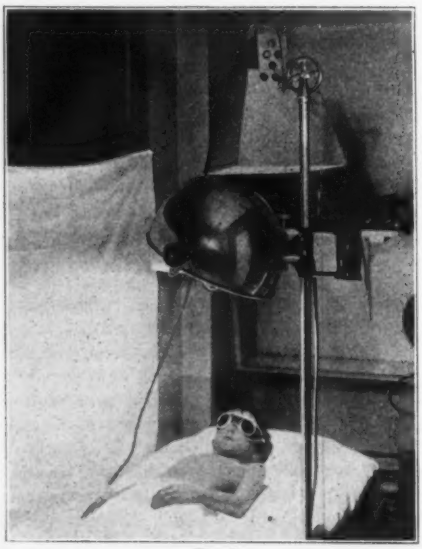


Fig. 3.

The patency of the tube is secured by resolution of lymphadenoid tissue by the x-ray.

The technic is illustrated by Fig. 1. As may be observed, the ray is directed upward from the target, passing through suitable perforated steel plates and directed upon the area involved. The patient's face is turned slightly upward in order that the mandible

may not cover the tonsil and fossa of Rosenmüller. The dosage is the minimum which has been proved to destroy embryonic lymphoblasts and is three to five milliamperes; seven-inch spark gap; ten-inch distance; and time, three to five minutes. This is applied every two weeks for eight to ten treatments.

During this period, the patency of the tube is tested by catheterization, which also furnishes dependable information as to the progress of secretory diminution. When the tube is open and dry, then and not until then do I employ vibratory massage to the tympanic membrane in those cases which have passed to the adhesive stage.

In suppurative cases also during the period of x-ray treatment I apply, as a bactericidal agent, the condensed water-cooled ultraviolet ray. Fig. 2 illustrates this technic. In addition to this, its direct application to the drum membrane is of much value in suppurative otitis media.

If the patient's general health is involved, his resistance lowered, I make free use of general ultraviolet irradiation to the entire body as shown in Fig. 3, the effect of which upon general metabolism is well known.

The frequency with which every otologist encounters the aural disturbances herein considered makes it easily possible to append hereto a voluminous list of cases, but I refrain, believing that my readers prefer to fit their cases to the generalizations which I have tried to establish.

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Blood Pressure Studies

By A. L. BENEDICT, M. D., Buffalo, N.Y.

ABOUT the beginning of this century, I did some work with the tonometer, an instrument to determine blood pressure by shutting off the capillary circulation in the finger. The results were not very satisfactory so that the instrument was dismantled and I dismissed the subject as one of physiology in which the variations of blood pressure can be shown very directly by connection with an artery. A meeting with Louis Faugere Bishop at the "House of God" in Paris in 1908, when he was demonstrating his water manometer, was what really aroused my interest in blood pressure as a clinical factor. However, it was only in the military experience of 1917-18, that the ability to work rapidly and, so to speak, wholesale was developed. Probably many other physicians were speeded up in the same way, for all sorts of medical details. In 1921, also at the "House of God" in Paris, I had the privilege of working with the oscillometer but never acquired the knack of determining diastolic pressure nor did it seem that the method was either so easy or so accurate as the American method of auscultation in connection with the mercury manometer or dial.

This autobiographic sketch is presented with apologies so that the reader may have a manometer for determining the weight of the subsequent discussion which, in fact, will be rather a confession than a boast.

Normal Variations

As in gastric acidity, urinary specific gravity and acidity and nearly everything else in medicine except body temperature, it is extremely difficult to establish accurate norms of blood pressure or quantitative expressions of departure. On the whole, the simplest and easiest rule of thumb is that the systolic pressure should be 100, plus the age, with adult extremes at 100 and 150; that the diastolic pressure should be ⅔ of the systolic; and to allow 10 to 15 percent leeway for any quantitative statement.

As the systolic pressure of any individual varies, at different times, at least 20 mm. without explanation, it is difficult or impossible to attach significance to minor differences and, especially, to check up the results of treatment or of etiologic factors. Personally, having abandoned mathematics in favor of medicine, I am convinced that the living body cannot be reduced to anything approaching accurate mathematic calculations.

Often, one feels that the blood pressure mockingly asks, "Well, now you have me, what are you going to do with me?" A

woman of 35, normal as to ordinary examinations of heart, lungs, blood, urine and everything else, just back from an ideally hygienic vacation, complained of exhaustion. Her blood pressure was 96 S.; 64 D. (exactly the proper ratio). She was given 2Cc. of standard tincture of digitalis. (Parenthetically the preference may be expressed for reasonably large doses, repeated according to effect, but not, except in extreme cases, attempting to give a week's dosage at once.) Two days later, she reported herself feeling well and strong and sure that the blood pressure had been raised. As a matter of interest, it was taken and found to be 88 S.; 57 D. The instrument, by the way, checked up correctly immediately afterward. Now, in such a case, what would you do, give more digitalis or be guided by the subjective condition?

Symptomless Hypertension

On the other hand, consider the case of an aviation officer, aged 55, but in every way as active as a man of 35 or 40; able not only to stand the special physical tests for aviators but to *fly*. His systolic pressure ranged about 200. No cardiac murmurs; heart area normal; no arcus senilis; arteries not hardened; blood and urine normal—in fact nothing abnormal but the blood pressure. These statements are not merely personal opinions but represent the results of observation by experts, for a reasonable period.

Once having seen a case of addiction to nitroglycerine, I have regarded the nitrite group as indicated only in emergency or for comparatively brief periods. Quite often I have encountered immediate and even apparently relatively permanent lowering of blood pressure from high frequency currents. I have learned quite a good deal about dietetics and have unlearned somewhat more. I have a very convenient index, arranged alphabetically, which tells me what is good for various diseases and symptoms. BUT: I did not know how to medicate, diet or regulate this man who felt perfectly well; I did not know how to bring his blood pressure down from 200 to, say, 140, either fairly permanently or so that he could fool a board of surgeons and be retained in a service which does not allow high blood pressure. Consequently, he is enjoying subjective health and a very active retirement.

One thing that has troubled me considerably is the expression "Cardio-vasculo-renal". There are so many cases in which one or another of them is perfectly evident and in which neither of the others shows any sign of disturbance. Then, there are so many cases in which the blood pressure is abnormal, (usually high in elderly persons; usually low in young ones), but in which it is difficult to find the corresponding lesion of heart, artery or kidney, which ought toi be found according to the well-known descriptions of the symptom complex and general circumstances.

Variability of Reflexes

Another thing that has caused much difficulty, is the direction of a reflex effect. For instance, in indol poisoning—a very real and visible if not tangible matter, by way of the urine—; marked gaseous distension of the stomach or intestine; emotional states; endocrine disturbances; and all sorts of conditions, more or less understood, will the result be constipation or diarrhea; tachycardia or bradycardia; hypo- or hyperchlorhydria; or, for our present discussion, high or low blood pressure? There seems to be, in such phenomena, as in the direct action of drugs, a real alternation of effect according to intensity of the stimulus or sensibility of the reflex arc and, occasionally, one may even discern a swing back to the original condition. But, in the case of abnormal blood pressure, we usually have merely a fact—high or low pressure—a more or less definite description of a plausible cause, and the necessity of explaining its operation in a consistent manner so as not to contradict our logic in the next case.

One fact is often overlooked or misconceived: mental calmness after an emotional strain, including the results of actual lesions of the nervous system, does not, by any means, imply insensibility in the arc leading to a secondary chemical or involuntary muscular reaction. If anything, the stoic, the person "who bears up bravely", or "is callous", or who is supposed, even by the physician, to have a slowly acting nervous system seems rather more apt to develop a definite reflex condition than the one who immediately reacts violently.

The following case is interesting:

A woman of 50 to 55, had a persistent high blood pressure with nothing in particular to account for it, further than the history of a chronic colitis ten years or so ago and apparently entirely cured. She was quite conscientious as to diet, so far as avoidance of tea and coffee, restriction of meat and

general carefulness and abstemiousness were concerned. Sodium iodide and nitrite were given occasionally when the pressure reached 200 (maximum 216). The high frequency current did not produce any conspicuous results. Forced exercise usually raised the tension 5 to 10 mm. but not always, and there was sometimes a fall.

It would have been pleasant to feel that the intermittent fall of tension to 165 was due to therapeutic measures but, as a matter of fact,—as in so many such cases—the variation in tension did not seem to be correlated to anything; either to diet or medication on the one hand (barring the reduction during courses of nitrites), or to occasional overstepping of diet or regulation of effort on the other. Except for occasional headaches and other symptoms, intercurrent colds and the like, there was nothing to make one think of high tension except the actual test. The only possibly significant point was that, in pumping up the air chamber, the pulse nearly, but not quite, stopped, 10 to 15 mm. short of the point of absolute silence. Some cases have this characteristic quite markedly. It may explain the discrepant results obtained by different examiners, especially if one relies on palpation and the other on auscultation of the pulse, or if one is slightly deaf; or the difference in personal equation may be considered analogous to that in determining the end-point of a chemical titration. The most plausible explanation of the difference between such cases and those in which the pulse is quite suddenly shut off, with little difference between the readings by palpation and by auscultation, and no question of more than one or two mm. of pressure, is that the former cases, showing a range of say 10 mm. of reduced but appreciable pulsation, are definitely associated with rigidity of the brachial artery. This brings up the question as to whether the excessively high readings sometimes reported really show blood pressure, or whether they simply mean that the artery under the cuff is practically incompressible or that the pulse is finally shut off by the air pressure reaching a point above or below the area of complete rigidity.

We must not forget that arterial changes do not progress uniformly through the system. An incompressible radial may perhaps be the sole spot of fibroid or calcareous change; the person with the premature and marked arcus senilis, may have soft arteries and low blood pressure; we cannot, by blood pressure or otherwise, foretell who is going to have a cerebral hemorrhage; nor can we make an infallible differential diagnosis between hemorrhage and embolism.

On the other hand, a considerably older woman, about 75, had cataracts, arcus senilis, some detectable arterial hardening and frequent, severe headaches. Naturally, high blood pressure was thought of but the test showed 122 S.; 60 D. The extent of the range between diastole and systole (pulse pressure) probably is due in such cases, to inelasticity of the arteries and it should be borne in mind that the potential dangers of such a case are quite in line with those associated with high pressure; more imminent indeed than in many cases in which the pressure really is high. As a matter of interest, it may be added that the daughter, aged 55, had a pressure of 108 S., 66 D.; the granddaughter aged 30, 98 S., 66 D. The attempt to get the pressure of the great granddaughter, failed.

Speaking of failures, I occasionally encounter cases in which I am unable to get the pressure either by palpation or auscultation. These cases are usually in young persons and sometimes are marked by difficulty in getting the pulse at the wrist or even of hearing the heart sounds, but without evidence of syncope or great weakness. Sometimes the pressure is obtained by changing arms; usually there is no trouble at a subsequent examination. As attempts at taking blood pressure of other patients succeed immediately following, there cannot be serious trouble with either the instrument or myself. It is possible that by collecting experience we may obtain a more satisfactory explanation than the easy but uncomplimentary one that some of my friends have suggested.

Indications for Treatment

We need not discuss findings of abnormal pressure in cases presenting frank lesions or marked neuroses. The treatment may not be easy nor successful but the indications are fairly clear. For instance, there are many cases in which one wants to steady the circulation, but without increasing blood pressure or lengthening diastole, so that digitalis is excluded; in which the heart seems strong enough so that strophanthus is excluded. In such cases, I have used cactus grandiflorus, not with much success but with occasional apparent benefit. Certainly the attempt to make cactus unethical seems unreasonable, but there remains the

cold question of its value and I should be glad to learn of a satisfactory substitute.

What I find particularly embarrassing is the case of high tension, with apparent good general health—or only such intercurrent affections as most persons have—without obvious lesions discoverable by the usual physical, chemical and microscopical examinations, and when the patient has come in response to the propaganda for periodic examinations.

A propagandist illustrated the plight of some of us who lack imagination and x-ray vision, at the latest meeting of the A.M.A. In a cinema metaphor, the physician and patient were represented by a prudent owner and his automobile. Probably unconsciously, a particularly trying patient was implied by posing an automobile with overhead valves. The owner fussed about for several feet of film doing something for the benefit of the automobile which considerable experience with organic and functional troubles failed to make comprehensible. Suddenly, the radiator steamed violently and the man poured in a pail of water without getting his face scalded. As the picture closed without showing an interview with an expert as to whether the cylinders could be repaired or whether the engine would have to be replaced, we judge that the radiator had not run dry from neglect; that the water somehow mended a leaky hose; and that everything ended happily. But what a beautiful metaphor it was of the professional interview in which the physician walks three times around his patient, registering wisdom, takes his pulse and temperature, and gives nitroglycerine with happy results as to the blood pressure and no unhappy results otherwise.

Diagnosis of Heart Lesions

There are two ways in which the sphygmomanometer is of great service, irrespective of absolute figures. Let me confess that there are cases in which I have thought there was a Corrigan pulse but in which no leak of the aortic valves could be discovered; and conversely, I have sometimes failed to detect a leak by the pulse. But when, instead of the ratio of 3:2 between systolic and diastolic pressure, there is a tremendous difference—say from 150 or more down to 50 or even less—we have a quantitative interpretation of Corrigan's observation. Generally speaking, when the blood pressure is high, the diastolic pressure is increased somewhat less than the systolic so that a pressure of 210 S., 100 D. would not imply an aortic regurgitation. We all know, though we do not always realize, that the sounds heard at a valve have very little relation to the seriousness of the lesion. Thus we may hear a murmur when the sphygmomanometer does not indicate much or any loss of pressure by regurgitation; again, there may be a very serious regurgitation with no murmur but, in such cases, it is very rarely that we hear the valve click.

It would be interesting to extend this discussion to show how an aortic obstruction is indicated by a relatively low systolic pressure and how even the more remote valves affect tension. But, even before the days of sphygmomanometry, it was quite generally held that an aortic direct murmur does not usually indicate any very great obstruction; nor, except in a general way, as affecting the strength of the circulation and its steadiness, does it appear that other valvular lesions have a specific, diagnostic effect on the blood pressure. However, it may be that more careful study will reveal facts of which, at present, many of us are ignorant.

I think it was Agassiz who kept a student two or three hours in the endeavor to make him mention, as a characteristic of fish, their symmetry, which we all see and take for granted. How many of us have recognized the wonderful evenness of the cardiac contractions, often in spite of quite serious cardiac and vascular disease? While, of course, the force of systole and the tension maintained at diastole are constantly changing, when we get the cuff inflated to the right pressure, we cut off every beat and when we relax the pressure, the silent point affects every diastole. Very occasionally, a functional disturbance, possibly due to some trivial stimulus during the examination, will make one or two beats a minute or an occasional one, in a protracted examination, come through audibly above the general systolic limit of silence. But such cases are, it seems to me, far less frequent than those of arhythmias in which an occasional extrasystole is silent during the auscultation with the cuff applied, impalpable at the wrist, and noted only by auscultation of the heart itself.

In severe organic disease of the heart, including cases in which compensation has begun to fail without such conspicuous signs as murmurs and previously noted arhythmia, one occasionally—not always—

gets some such a phenomenon as the following:

160 mm. complete silence
150 - -- - - - --
140 --- -- - --- - -- -
130 all beats heard except extrasystoles.

and similarly for the diastolic limit.

Dorothy D., aged 22, had had serious heart disease of rheumatic origin for many years. The existing lesions were a mitral stenosis and regurgitation, with cardiac hypertrophy and auricular fibrillation, not typical. Several examinations the month before death, showed a range of systolic pressure from 134 down to 104 and of diastolic pressure from 94 to 70, with fairly close conformity to the 3:2 ratio. As compensation finally failed—and this was a case in which, with the main reliance on digitalis, cactus had given very good service—the systolic pressure had an immediate range of nearly 30 mm. between the points at which all beats were shut off and at which all true beats came through, the diastolic range being about the same. In fact, it was not possible to say whether certain beats came in the lower range of systole or the higher range of diastole. With a rapid, irregular heart, it would be impossible, without automatic registering devices, to represent exactly the action.

A man of 70 presents a both-way murmur, heard best in the second and third left interspaces, the sounds at the second right space and at the apex being apparently normal. The heart is enlarged moderately to the left, not appreciably to the right; but this is a difficult point to determine accurately by ordinary or auscultatory percussion or even by x-ray, in the sense of definitely locating the enlargement, anatomically. There is chronic bronchitis and dyspnea, subject to exacerbations. The systolic pressure is about 150, the diastolic 90 to 100. This confirms the absence of aortic lesion but the question remains whether, with the absence of a murmur and the presence of a knock at the apex, we can exclude mitral regurgitation; whether the diastolic portion of the murmur is mitral obstruction or whether there is a right-sided lesion.

In a recent case, the systolic limit ranged from 170 to 180 and the diastolic from 50 to 60. This would justify the diagnosis of aortic regurgitation. There was no murmur but, conversely, neither was the valvular click heard. There was a fairly typical two-way mitral murmur. As in many other instances, the diastolic murmur was *really* such, and not briefly pre-systolic. No valve clicks were heard anywhere. In such cases —of which I have encountered only a few— the question arises whether one can say that there are regurgitant lesions in the right heart also. The fact that, in spite of the high systolic tension, the contractions are of differing strength, indicates, I think, marked cardiac failure and, as illustrated in the foregoing case, very serious cardiac disease does not always present this difference in systolic and diastolic levels.

Reverting to the woman with high tension and good general health for several years: she lost her husband suddenly and bore up with great fortitude and calmness but quite suddenly showed lower pressure—about 165 —and with a variation in the systolic level; doubtfully of the diastolic which, in general, is subject to rather more observational error. On auscultation, numerous extrasystoles were heard. Within two weeks she developed right hemiplegia and died.

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Relation of Rectal Disturbances to Other Pelvic Diseases

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THE symptomatology of affections of the rectum frequently gives the false idea that such lesions have their origin in other pelvic viscera, which impression leads to a wrong diagnosis, and patients undergo futile operations because of such mistakes.

All of the pelvic organs are united in one grand nerve-plexus and an irritation arising from any source may be reflected so as to appear to originate in another. Thus the etiology of every symptom must be carefully investigated and all of the pelvic organs, together with most of the abdominal organs, are to be examined in every rectal patient. Unless such an extended and painstaking examination is made, treatment will be directed exclusively to the rectal pathology and prove futile. In some instances of disease elsewhere the symptoms are referred to the rectum although no rectal pathology will be found. On other occasions symptoms of definite rectal pathology will be found due to extrarectal causes.

Extrarectal disturbances may incite rectal expression by:

1.—Pressure of some other pelvic organ upon the rectum.

2.—Lymphatic extension of chronic inflammation from the various pelvic viscera.

3.—Indirect pressure through the blood column, as in cardiac, hepatic or splenic disease.

4—Continued coughing due to respiratory or cardiac disease.

5.—Undue straining due to urethral stricture, vesical calculus, or cystitis.

6.—Reflex nervous symptoms.

Although the primary pathology may be extrarectal, very positive disturbances within the rectum may be set up, as for example: proctitis, ulcerations, hemorrhoids, fistula and fibrous stricture may result. *No pathology of the rectum can be considered adequately diagnosed unless its etiology has been determined.*

Constipation

Constipation, coming on in adult life, always warrants diligent investigation as it is frequently due to extrarectal causes. A given causative factor may produce very different symptoms, in different patients, as is exemplified in the following two case reports.

Case A.27. Female; single; aged 25 years; factory worker. Six years ago she had a peptic ulcer which was cured medically. Two years ago she had a recurrence of stomach trouble and again responded to medical treatment. One year ago she consulted the author for a rectal ulcer and constipation. The ulcer was excised and healed but the constipation persisted and became intractable. Anorexia and nausea on the partaking of any food developed later. Nothing was palpable about the abdomen. Rectally a distinct tumor was found to the (patient's) right of the uterus. Laparotomy was performed and the right ovary, the size of a lemon, was found adherent to the sigmoid and pelvic wall. The whole colon was filled with hard fecal masses which could not be disintegrated between the fingers. The ovary was removed and the denuded surfaces well covered. The expulsion of the fecal concretions was facilitated later by administering each night an enema of equal parts of mineral oil and olive oil with instructions to retain it as long as possible. She usually retained it all night. During her stay in the hospital the colon was thoroughly emptied of its old contents, and since her convalescence she has had regular passage of the sigmoidoscope to keep the rectum and sigmoid well dilated at the former seat of the angulation. She has had satisfactory bowel movements almost daily since her return home and is now in normal health.

To emphasize how differently a similar condition may be expressed the next case is reported here:—

Case B.1 Seen with Dr. Steele. Patient's mother died at the age of 74 years of cancer of the axilla. Her father, now 74 years old, is in good health but has had five rectal operations for hemorrhoids and fistula. The patient herself is 40 years old and has had an operation for hemorrhoids which bled and protruded. She enjoyed good health after the operation and had no rectal symptoms until 18 months ago when she began having bleeding from the anus after her bowel evacuations. This bleeding was of red, liquid blood and quite free if she had solid, formed stools or if she strained after the evacuation. Dr. Steele found a small ulcer on the anterior rectal wall which he cauterized and the patient suffered no more loss of blood for 2 months. Then the bleeding reappeared irregularly, occurring after each bowel movement for several days and not occurring at all for a few days. By keeping the stools soft, very little blood is now seen but formed evacuations are always streaked with blood and usually

followed by bleeding. There is a heavy sensation in the pelvis or rectum but no pain.

Examination—Inspection negative.

Digital—The finger could be introduced its full length without obstruction. Bimanually a mass the size of a small fist could be felt in the pelvis to the left of the uterus and above the reach of the finger.

Specularly—The speculum could be easily introduced about 4 inches, when it met a firm obstruction beyond which it could not be passed. Through the speculum there could be seen a bulging of the rectal wall and a probe passed through the speculum noted a firm but not solid mass. The mucosa of the anterior rectal wall at this point was ulcerated and was easily made to bleed. There was evidently a pelvic tumor causing obstruction of the rectum. A pelvic laparotomy was performed and a firm cystic tumor 2½ inches in diameter was found in the left ovarian region. Firm adhesions held this mass to the rectum, pelvic wall and the broad ligament. The mass ruptured during the enucleation and there escaped an unabsorbed corpus luteum about the size of a blue grape. During the enucleation several others were ruptured before the sac was removed. One corpus luteum about the size of a pigeon's egg was delivered complete. Following the operation the proctoscope could easily be passed above the level of the former obstruction. There has been no bleeding since. (Fig. 1).

Fig. 1. Ovarian tumor compressing rectum.

Uterine myomata seldom compress the bowel. Rarely they fill the pelvic cavity snugly, but usually rise above the brim in the same manner as a pregnant uterus. Ovarian cysts, pelvic hematocele, hematoma and inflammatory exudates into the broad ligament usually cause some degree of constipation.

Advanced malignant growths of the uterus or its appendages invariably cause constipation and inflammation of the pelvic bowel.

Carcinoma of the cervix and of the vagina invade the rectum and cause fistulous openings, but only when in an advanced stage. On the other hand, low cancer of the rectum involves the vaginal wall comparatively early.

Fistula

In all pelvic operations where adhesions exist, the rectum may easily be injured. All wounds of the rectal wall must be carefully sewed up to avoid fistulas. Most postoperative fistulas occur where the damage to the rectal wall was only partial and escaped the surgeon's notice. If gauze drainage is placed in contact with one of these injured parts a fistula is inevitable. Many of these postoperative fistulas heal spontaneously and should be given that opportunity before attempting surgical repair.

Rectocele

The rectocele which follows laceration of the perineum interferes with proper defecation, and is an annoyance to the patient on account of the sense of protrusion from the vagina. The repair of the rectovaginal fistula and laceration of the sphincter is an important part of the reconstruction after injuries of childbirth.

Localized Pains and Painful Areas

Localized pain either complained of or elicted on palpation in the region of the left ovary may be diagnosed as ovaritis or salpingitis, when in reality an impacted sigmoid, or an angulation of the sigmoid, due to adhesions to the ovary, or perhaps the stump of an extirpated ovary may be the cause.

Sigmoiditis, perisigmoiditis or diverticulitis are often overlooked. Pain or tenderness, made worse by walking and sharply localized by combined abdominal and vaginal examination, may be the expression of any of these conditions and calls for a careful sigmoidal examination.

Pelvic Infections

The second class of etiological factors are those due to lymphatic extension of chronic infections from other pelvic organs. The loose, pelvic, cellular tissue is an avenue of easy dissemination of infection, extravasations of blood, or the spread of neoplastic tumors.

Periproctitis (pelvic cellulitis), microbic infection of the pelvic cellular tissue, occurs

through the lymph channels and may be localized or may spread widely, even to a general peritonitis. This infection may be limited to the stage of infiltration, or it may progress to extensive abscess formation. If suppuration develops, the abscess may rupture into the rectum, bladder or vagina. The healing of cellulitis results in dense scar formation which may cause serious immobilization and dislocation of the pelvic organs and, in the rectum or sigmoid, very sharp angulation or stricture of the lumen.

Etiology:—Periproctitis most frequently results from ulceration within the rectum, traumatism of the wall by a foreign body in the fecal bolus, or careless instrumentation. This type of cellulitis usually goes on promptly to abscess. Angulation or stricture of the rectum by a pelvic tumor or even a retroflexed uterus may occur. Simple contact of a normal uterus is not likely to excite irritation of the rectal peritoneum but a congested or inflamed uterus or its adnexa, crowding the bowel, can interfere with the normal rectal peristalsis, and by this stasis produce inflammation of the rectal peritoneum with lymphatic congestion of the perirectal cellular tissue, and the development of adhesions fixing the rectum and sigmoid to the other pelvic organs. This process may result from constipation even without pressure upon the bowel or any organ. This infiltration type of periproctitis is a painful and intractable condition.

Symptoms:—The chief symptom of periproctitis is pelvic and rectal pain, usually more accentuated on one side than the other. On account of the proximity of other pelvic organs symptoms of metritis, ovaritis and cystitis may appear. There is some rise of temperature and, if suppuration develops, there is a marked leucocytosis.

Periproctitis of the infiltrative, nonsuppurative type, though milder in its course, has a tendency to recurrences after subsidence of the first attack. In this manner the convalescence following operation may be delayed many weeks.

Digital examination usually detects periproctitis quickly by the fixation of the rectum in a mass of hard, board-like tissue. This immobilization is simulated only by the infiltration of cancer or by a hematoma in the cellular tissue. The indurated area, usually very tender, is situated on one or both sides of the rectum, or perhaps extends all around the bowel and reaches out to the pelvic wall. Suppuration is indicated by increased swelling and localized softening of the mass, aggravation of the subjective symptoms and a rise in the leucocyte count.

Differential Diagnosis:—The differentiation of periproctitis and hematoma cannot always be made, although in the latter there is less systemic intoxication, less pain and a normal leucocyte count; that due to septic absorption from a cancerous mass cannot be positively distinguished from the infiltration of the malignant disease. All rectal cancers present some periproctitis as soon as ulceration occurs and this cellulitis is aggravated if radium or the x-ray have been used. Both of these agents produce an inflammatory reaction in the pelvic cellular tissue, which makes radical operation immediately following their use exceedingly dangerous as regards postoperative sepsis.

Treatment:—Periproctitis tends to resolution rather than suppuration, and palliative treatment, with close observation, should be tried. Rest in bed, constant use of the therapeutic lamp, rectal irrigations and, in women, hot vaginal douches usually suffice. In some instances recovery occurs in a few days, although it may require several weeks. If suppuration develops the abscess must be incised promptly. Postoperative periproctitis may sometimes be relieved by enlarging the drainage opening or by removing one or more stitches and inserting drainage.

Thrombosis

Pelvic cellulitis usually includes, together with the infective agency, a thrombosis of the veins passing through the involved tissues. This thrombosis may be confined to the smaller vessels or it may extend to the internal iliac, common iliac, and even to the vena cava. The relationship between the inflammatory process and the formation of thrombi is not a constant one. Extensive thrombosis may follow a very slight pelvic infection and vice versa. Extension to the crural vein causing phlegmasia alba dolens (milk leg), or pulmonary embolism are most to be feared. All pelvic operations, where some active infection of the cellular tissue exists, may be followed by this complication. Minor rectal operations and even traumatism incident to examination of the pelvic bowel and rectal ulcers have caused periproctitis.

This point is of vital clinical importance in arriving at a prognosis where there is a sloughing tumor or ulcer of the rectum, possibly malignant, because it is important

to determine by palpation whether the periproctitis is due to infection or cancerous infiltration. The decision of this point may decide whether or not the case is operable. Rare causes of periproctitis are perirectal hematoma which later has become infected, and also a spreading infection of actinomycosis.

Diverticulitis of the sigmoid may cause symptoms very like pelvic cellulitis and acute salpingitis. Because of the mobility of the sigmoid, the inflammatory mass in which the diverticulum is included may be on either side of the median line and be so deep that it cannot be distinguished digitally from an enlarged ovary or tube.

Abscess

Pelvic cellulitis often goes on to abscess formation, sometimes with rectal stricture resulting. Appendicular abscesses also sometimes rupture into the sigmoid colon.

Abscesses which drain into the rectum do not heal satisfactorily but usually have very small openings and tend to repeated accumulations and discharge of pus. These necrotic diverticula are always a menace to life. Bodkin[1] mentions an enema entering such an abscess cavity which burst and caused peritonitis.

Retrouterine abscess, invading the pouch of Douglas, is associated with pain high up in the rectum occurring on defecation and this pain continues long after the abscess has been relieved because of the scar.

Pelvic abscess of gonorrheal or tuberculous nature are made much more virulent by the mixed infection caused by adhesions to the rectum which permit the migration of intestinal microorganisms into the abscess cavity.

Hemorrhoids

A form of vicarious menstrual loss is the increased tendency of hemorrhoidal veins to bleed at this time though no actual hemorrhoid may exist. Hemorrhoids which may have existed previously have a tendency to become worse at the climacteric and most hemorrhages from the bowel at this time are from this cause, although malignant disease of the pelvic bowel must be carefully sought after and excluded before deciding that the case is one of true climacteric, intestinal bleeding from the mucous membrane.

Hemorrhoidal symptoms frequently date from childbirth. The pressure and stretching of the anal sphincters at this time cause hemorrhoids or aggravate small ones already present, leaving the veins permanently dilated and sometimes fissured.

As extrarectal causes of hemorrhoids we must remember diseases of the heart, liver, lungs and atheroma of the blood vessels. Valvular insufficiency of the right side of the heart, through the venous back-pressure and hepatic engorgement which it causes, induces hemorrhoids because the hemorrhoidal vessels cannot empty themselves. Cirrhosis of the liver acts similarly and causes piles.

Nervous Reflex Disturbances

The female reproductive organs are particularly prone to reflex disturbances due to rectal pain.

The close anatomical and physiological relation of the bladder and rectum often gives rise to disturbed functionating in either organ, probably by way of short-circuited spinal impulses. The operation for hemorrhoids is frequently followed by retention of urine; and again, the congestion due to dysmenorrhea or the tension of a prolapsed ovary or uterine inflammation may cause proctitis, spasmodic anal sphincters and cystitis. Ulceration of the rectum and even constipation may cause irregularities or a suppression of menstruation.

In many women diarrhea is often an annoyance during the menstrual period, while in others obstipation is common. Some patients who suffer from chronic constipation between these periods have regular bowel evacuations or even diarrhea during menstruation. An obstinate diarrhea without colic or mucus discharge sometimes signalizes the beginning of the menopause. In other patients obstipation with a tendency to gas formation, occurs at the climacteric and is resistant to the usual course of treatment. Wagner[2], in two such cases, had good results with ovarian therapy.

An ulcer of the rectum, fissure in ano, stricture or cryptitis will often cause reflex spasm of the levator ani and sphincters of the anus and vagina, thus producing a local neuralgia or, in other instances, widespread reflexes cause ovarian or uterine pains which closely simulate disease of these organs. Such patients are not relieved by treatment directed to the generative organs but are promptly cured when the rectal disturbance is attended to. On the other hand, rectal pain and tenesmus may be due to cystitis, vulvovaginitis, displacements and adhesions of the uterus or appendages. Parametritis may cause stricture of the

perirectal tissue. Pain referred to the rectum may be due to strain of the iliosacral synchondrosis.

Parturition may be much protracted by a foreign body or fecal impaction of the pelvic bowel. Hypertrophy of the levator ani muscle and sphincteric tenesmus should be carefully looked for and relieved during the end of pregnancy as these conditions prevent full relaxation of the perineum.

Autointoxication from colonic stasis may also give rise to mental and nervous disorders. These conditions so interfere with the peristalsis of the sigmoid and rectum, with its blood supply or nervous equilibrium as to cause constant suffering.

While any one of the above mentioned conditions may cause our patient's suffering the possibility of several factors combining in one patient must always be thought of. A cure of one cause is not likely to relieve the pain and suffering due to another disturbance.

References

1.—Bodkin: Diseases of Rectum. E. B. Treat & Co., Publishers.
2.—Graves: Gynecology, p. 73.

Ideals

"I HAVE had three personal ideals. One to do the day's work well and not to bother about tomorrow. It has been urged that this is not a satisfactory ideal. It is; and there is not one which the student can carry with him into practice with greater effect. To it, more than to anything else, I owe whatever success I have had—to this power of settling down to the day's work and trying to do it to the best of one's ability, and letting the future take care of itself.

"The second ideal has been to act the Golden Rule, as far as in me lay, towards my professional brethren and towards the patients committed to my care.

"And the third has been to cultivate such a measure of equanimity as would enable me to bear success with humility, the affection of my friends without pride, and to be ready when the day of sorrow and grief came to meet it with courage befitting a man."—Dr. William Osler.

Work

FOR there is a perennial nobleness, and even sacredness, in Work. Were he never so benighted, forgetful of his high calling, there is always hope in a man that actually and earnestly works. In idleness alone is there perpetual despair. Work, never so Mammonish, is in communication with Nature; the real desire to get Work done with itself leads one more and more to truth, to Nature's appointments and regulations, which are truth.—S. Carlyle.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M.D.

(Note. Address all communications intended for the Seminar to Dr. Blech, 108 North State Street, Chicago.)

Appendicitis

It would seem that, at this stage of advance of surgery, little room should be left for the discussion of appendicitis, and that treatises or textbooks must contain all that can be said on the subject.

It appears, however, that this impression is erroneous.

Again and again letters have come to us containing earnest requests for criticisms of what were regarded by the correspondents as sins of omission and commission; and many surgeons, even those living in large medical centers, see almost daily the results of poor diagnoses and improper management of acute appendicitis. It is obvious, therefore, that appendicitis still presents diagnostic and therapeutic problems, some of which we shall discuss in this and subsequent issues.

The trouble with acute and even chronic appendicitis is the same as with many other diseases of a somewhat complicated character, whose pathology has been worked out in recent years. In the early period the younger practitioners—and the present writer was one of them—demanded the knife as the sole salvation for any and all forms of appendicitis; but there were equally prominent members of our profession who preached a certain degree of conservatism.

All this should have been settled by now, and yet in the rank and file we still hear a good deal about certain conditions under which therapy other than operative is distinctly indicated. This is justified, no doubt, but it is the *conditions* which are easily misunderstood and misinterpreted, leading to sad therapeutic results. This uncertainty has reached the ears of the more intelligent classes of laymen, and occasionally affects, indirectly, the patient's welfare.

To illustrate what we have in mind, let us present a concrete example:

Mrs. M., aged 46, the mother of several grown children, the wife of a prominent citizen, begins to suffer from griping pains in her abdomen in the early morning. She believes that she has upset her stomach by something she ate at a banquet the preceding night, and decides that a few simple household measures should suffice to get rid of the difficulty. Her husband acquiesces. In the evening she seems much worse and the family physician is sent for. When he sees the patient, the examination leaves no doubt in his mind as to the character of the trouble, and he properly advises immediate operation. Both the patient and her husband tell the physician that an operation is not acceptable, that they have entire confidence in his ability to cure her without an operation and that they know of at least four people who died after appendectomy and they mention three prominent women who recovered under medical treatment. They decline a consultation, on the ground that they agree with the diagnosis and that they feel that the attending physician can prescribe the necessary treatment without the assistance of any one.

The attending physician hesitates, but any arguments on his part are swept aside by an imperative gesture of the patient, who is supported by her husband, and finally the physician decides that, as he cannot guarantee life under any circumstances, he is in no position to antagonize a prominent and influential family.

He begins the treatment properly enough and, to the satisfaction of all, the patient improves somewhat. But this state of affairs does not last long. On the fourth day there is a sudden turn for the worse; the diagnosis of general peritonitis becomes easy and now the physician asserts himself and demands a consultation in no uncertain terms. A surgeon opens and drains the abdominal cavity in a very few seconds and institutes the most appropriate post-operative care, but the patient dies within thirty hours.

The above case is not only an actual one but typical of countless thousands in all civilized lands; and the question must be proposed, who is to blame?

In the above case, as in similar ones, we say without hesitation that the greater share of moral responsibility rests with the attending physician. We do not say that the physician should have withdrawn from the case when his advice for immediate operation was ignored, but he should have made his standpoint clear to all concerned, in no uncertain terms, and demanded that, if his advice is not heeded and the family

insists on gambling with the patient's life, then he should be freed from all moral responsibility for the outcome.

The argument that many have died from operation could have been overcome by pointing out the countless lives saved by surgery and fortified by the counter claim that tremendous numbers die if *not* operated upon. He could have pointed out that the patient had been ill less than twenty-four hours and that the overwhelming majority of patients operated upon within that time for acute appendicitis recover.

But the physician did none of these things. He acquiesced too easily. In this particular case the excuse was that the pulse was below 120; that the temperature was very little above normal; that the tongue was moist at the edges; that the facies was fairly normal; and that, in view of the situation, physical and social, he did not feel justified in urging a step, the results of which he could not guarantee; and in view of the further fact that a large number of patients do recover under conservative measures; that the muscular rigidity, being limited to the right side, suggested the idea that the entire infective process might become localized, with eventual recovery; and the like.

We have seen the outcome of this philosophy. It will be well to remember this case, for we shall, in the near future, refer to it when we sum up some of the lessons of the problem.

There is one more argument that may be mentioned at this time, as a sort of general proposition, which is that there is quite often the probability of an error in diagnosis.

We are willing to admit that such a probability does exist, even though all phenomena point to abdominal infection of appendiceal origin. Indeed, the Seminar has devoted a good deal of discussion to the differential diagnosis of acute abdominal inflammations, infections and lesions of a more or less surgical character, but all this does not affect the moral guilt of the practitioner in the case given, for the reason that, no matter where the primary lesion producing the phenomena enumerated was situated, operative therapy was clearly indicated.

Indeed, it is a thousand times better to open the abdomen in "acute surgical belly" and have to look for the primary focus elsewhere than where it was originally assumed to be than to allow a patient to die for fear of taking the chance of a diagnostic error. As a matter of fact some of the forms of acute appendicitis produce classic phenomena and an error is extremely unlikely; but such an error in diagnosis, even if made, is pardonable.

(To be continued.)

Surgical Error No. 1

Mrs. N. N., age 23, married about two years, is a frail, rather anemic woman, but otherwise well and without any previous history that may have a bearing on the present trouble.

She became pregnant and arranged for medical care. She had had for some time a moderate discharge from the vagina, but there never was any burning sensation nor pain referable to the genitals. A physical examination of the sexual organs was not made at any time previous to the birth of her first child.

A few months before delivery, her physician prescribed a mild solution of bichloride of mercury for a fissured condition of the left nipple. This treatment did not help the patient and there developed what the attending physician described as an eczematous condition. The treatment was changed to a one-percent solution of phenol, which allayed the itching and burning sensations, but had little if any influence on the "eczema".

About two weeks after the normal and spontaneous delivery of the child, the patient developed puerperal mastitis, at first in the left breast, and a few days later in the right also.

The affection was very painful and the patient had a decided rise of temperature. Hot boric acid and, later, magnesium sulphate fomentations were applied. There was slight fluctuation a little to the right and above the left nipple and some hard nodules could be felt in the lower third of the left breast. The right breast was only slightly irritated and there were one or two lumps palpable in the tissues beneath the skin and close to the nipple.

After five days' treatment with hot applications, a surgeon was called in. He criticized the method, ordered the patient to the hospital and there made two large incisions in the left and one large incision in the right breast, asserting, at the time of the operation, that this method would prevent extension of the infective process which might destroy the breasts and demand amputation.

After ten days the condition has not improved, and YOU are called in by the family physician.

The history obtained by you is as above given. There is a superficial abscess of the left breast near the nipple, and some thickened glands can be felt in both mammae. Milk free from pus can be obtained from the ducts.

Requirement: Criticism of the management of the case by the family physician; weighing of the propriety of the surgical procedure; and recommendation of a method likely to produce a cure quickly and pleasantly, under the conditions above stated.

Surgical Problem No. 1

A man presents himself with a deep ulcer on his right heel. He has had the ulcer for many months, and has taken all sorts of treatment, consisting of salves and lotions, which did no good, although, when the ulcer becomes very much inflamed—which happened quite often lately—he gets some relief from a milky lotion some physician has prescribed for him.

His previous history is without special interest. He claims to have had gonorrhea when about twenty years old. This is confirmed by the finding of typical shreds in his fresh urine. He has never had a chancre or any other sore or eruption. He is now fifty-nine years old, a printer by profession, and outside of the trouble with his right foot is in fairly good condition, though in the past few months he has not been as "peppy" as before. He remembers to have had a number of painful attacks in both lower extremities. A physician had told him he had rheumatism and he went to Mt. Clemens for the baths, which helped him somewhat.

His blood Wassermann test is negative. His urine shows 2 percent sugar. Acetone and diacetic acid tests are negative. His heart and lungs are normal, nor is there anything palpable in the abdomen. There is a left inguinal hernia, small and reducible, held in place by a truss. There is no adenopathy and a superficial neurologic examination shows nothing noteworthy.

The ulcer is very deep, down to the bone, and has callous-like margins. It is not sensitive to touch.

Requirement: Diagnosis and Treatment.

Questions Answered

H. S.—Texas. If carcinomatous metastases produce conditions which give rise to great discomfort, you are justified in treating the complications as separate phenomena, provided, of course, that the measures will not aggravate the general condition and hasten the undermining of the vitality.

You have ascites, secondary to carcinoma of the stomach. Doubtless other adjacent viscera are seriously involved and possibly there is peritoneal carcinosis. You state that the abdomen is sufficiently distended to annoy the patient and that you propose tapping.

If you feel that the fluid in the abdominal cavity is causing pressure symptoms and you decide to give temporary relief by the removal of the fluid, then do so by means of a regular laparotomy. The incision through the abdominal wall need be no larger than is absolutely essential to locate and lift up a fold of the peritoneum. This should be nicked carefully and the opening enlarged with the fingers or with a suitable instrument, the final disposition depending on whether or not you desire to maintain a permanent opening for the constant evacuation of accumulating fluid. The reason why tapping is to be condemned in this type of affections is because you are not dealing with a clear-cut type of ascites, but with a condition in which the needle or trocar may penetrate a cancerous growth of some sort, which would start a hemorrhage or sepsis.

Major D. L. Your query, as to when appendicitis was first known and referred to, is not easy for me to answer. It seems not at all unlikely that the ancient peoples knew something about it, because in their postmortem examinations they must have seen pathologically changed appendices. Mestivier, in 1759, is believed to be the first to have described appendicitis, which, in his case, was assumed to have been produced by a foreign body. Heister, on the other hand, tells of a case of a criminal whose body he dissected in 1711, and in which he found unmistakable evidence of gangrenous appendicitis and perityphlitis. The description would be creditable even to a modern pathologist. I hope this will answer your purpose.

We have, here in Chicago, a society for medical history. It meets fairly regularly during the cooler months and publishes a very attractive and interesting magazine. Membership is open to ethical practitioners. The secretary is Dr. Morris Fishbein, editor

[*Concluded on p.* 127]

Clinical Notes and Practical Suggestions

Light and Infra-Red Therapy

LIGHT means, to the average person, only that section of the solar spectrum by means of which he is able to see, that affects the visual sense. That section, although appearing to be white, is, in reality, composed of seven primary and secondary colors: viz., red, orange, yellow, green, blue, indigo, and violet.

In reality, there are three cardinal or primary colors—red, yellow, and blue—and this being true, the other four impressions registered by the retina must be the shades due to the blending of the primary rays.

The Spectrum

If one views sunlight or artificial light, as from an incandescent light bulb, by means of the spectroscope, he can see the three colors and the four shades. And all these combined make white light or daylight, while the absence of these rays is darkness. That is to say that a lack of all color or shade constitutes black.

All colors and shades consist of definitely measured wave lengths and the unit employed in medicine is usually taken as the Angstrom Unit—one-tenth millionth of a millimeter. Each wave length has a definite therapeutic value. Beginning at the red and continuing to the opposite end of the visible spectrum, including the violet, the wave lengths have been measured and found to be approximately as follows:

Color	Wave Length in Angstrom Units
Red	7000
Orange	6400
Yellow	6000
Green	5500
Blue	5000
Indigo	4500
Violet	4000

As the wave length decreases, the alternation or oscillation frequency increases, and vice versa. Thus, at the red end we have ether waves of comparatively great length and fewer oscillations.

The oscillation frequency of red is about 38,000 per second, while that of violet amounts to about 74,000 per second. Below the red end of the spectrum, we have the infra-red band, and the area of the radio and wireless. The infra-red band is subdivided into the near, middle and extreme.

Above the violet end, we find the invisible ultraviolet band, the Schuman space, x-rays and the gamma rays of radium. The ultraviolet is subdivided into near, middle and extreme bands.

Infra-red and Ultraviolet

Dr. Chesney, of Milton, Wisconsin, tells us that the wave lengths beyond the violet are so short and of such high frequency that they cannot register an impression on the human eye. If this is a fact, why cannot the same reasoning be applied to the band below the red? Infra-red rays are invisible because the oscillation frequency is too low to register a picture on the human eye.

It is a well-known fact that the opposite ends of the spectrum are physiologically antagonistic to each other. Red is heating and stimulating and, if carried to excess, red rays are irritating. On the contrary, blue rays are cold and sedative and may be actually depressant.

Up to the present time, more therapy has been derived from the cold end of the spectrum than from the visible and heat-producing ends. Wonderful results have been produced by the employment of the ultraviolet rays, x-rays and gamma rays of radium.

Heat Therapy

Heat has been and is today the greatest germicide. Countless clinicians have demonstrated that many bacteria will not withstand a temperature of 103° F. and over for more than thirty seconds, while individual body cells will stand 116° F. for a long time without destruction and 120° for short periods of time.

It was found in South Africa that, when persons suffering from any form of Neisserian infection were taken down with blackwater fever, on recovery, every symptom of gonorrhea had disappeared. And in Europe during the late World War, men suffering from gonorrhea were completely cured if they had some secondary infection, carrying with it a temperature of over 100° F. for several days.

Many well authenticated cases of automatic recoveries from cancer are recorded following pyogenic infections, carrying a high temperature for some time, as in typhoid fever, erysipelas, etc.

Infra-red energy has wave lengths varying from 8000 to 30,000 Angstrom units, and has the property of deep penetration and conversion into heat in the deeper tissues. Granting the truth of this, may it not be possible, by employing the longer wave lengths, to obtain any required heat in the deepest tissues with a known therapeutic effect? And by so doing may we not hope to destroy not only infection but carcinoma?

It has been demonstrated, both in the laboratory and the clinic, that this form of energy will penetrate the deepest tissues and, by its cell-stimulating and germicidal action, cure or relieve many bodily ailments. In addition, these rays produce an active hyperemia and phagocytosis.

Clinical Applications

Several instruments for applying infra-red energy, which are now on the market, will, when properly used, give excellent results in a large variety of cases. Bronchial cough, of an explosive character, may require several treatments, but, if employed from one-half to one and one-half hours, on the first treatment, it will often give absolute relief.

In severe cases of long standing, I usually follow the infra-red treatment with a treatment from the other end of the spectrum—the water-cooled, mercury arc lamp. I apply this energy through the tonsil applicator to the postpharyngeal mucosa, from one and one-half to two minutes; next, through the laryngeal applicator to the larynx. I grasp the tongue firmly with a clean towel and pull it forward, resting the applicator on the tongue with curved end pointing down into the larynx. I try to give forty to sixty seconds or even more. This is a rather difficult feat, as patients are prone to gag, but by using much care and persuasion, I manage to give at least a fair raying.

Old-fashioned "cold in the head, nose, and chest" responds wonderfully to the infra-red treatment within one-half to one hour. Almost all of the "itises", such as arthritis, respond rapidly and one can see the swelling go down. Muscular rheumatism, otitis media, dysmenorrhea, and all cases of stasis respond rapidly to infra-red treatment, and it is remarkable to note the rapidity of the effects and the amount of diaphoresis produced.

I recently had an opportunity of trying the infra-red treatment on myself while suffering from grip. Most of the symptoms were in my throat and head. The scalp and forehead were very tender to the touch; the cervical lymphatics and submaxillary glands were very much swollen and tender; the nasopharynx was dry and tender. The temperature was 103° F. for four days, and I was extremely nervous and restless and could not eat or sleep. It was almost impossible to remain in bed; although I did not retire until after midnight, I had to get up at 4:30 a. m.

I tried all of my electrical modalities without results, but the infra-red treatment gave me immediate relief. It seemed to act at once when applied over the face, neck and chest, easing the distress and soreness in the throat; loosening the thick brownish-colored mucus; and soothing the cough as well as the neuralgic pains in scalp, forehead and back of neck.

I alternated the treatment, first on the head, from twenty to thirty minutes, then over the feet for the same length of time, then repeated. I followed this with ten grains of aspirin and six minutes in the electric bath cabinet. The elimination was just what was needed, and after a hot shower gradually reduced to cold, I went to bed and enjoyed the first real sleep in several days. The next morning I was practically well.

GEO. A. REMINGTON,
Chicago.

PNEUMONIA SUGGESTIONS

In connection with your symposium on Pneumonia, I recall the lecture which our old teacher used to give the students at the Buffalo University more than forty years ago. You know those were the days when the didactic lecture was almost the only method of teaching, the clinics being given only one or two mornings a week.

Prof. Rochester was our lecturer on Practice and I heard his lecture on pneumonia three years' running, delivered in almost the same words. When he came to treatment he warmed up to the subject. Leaving his desk and his manuscript, he would walk back and forth across the platform before us, talking rapidly but without looking toward us. But, when he reached the climax of his treatment, he would stop short and, in a rather dramatic way, suddenly face the class and say, "But, whatever else you give, gentlemen, give carbonate of ammonia." Then he would explain that carbonate of ammonia promoted expectoration, stimulated the heart and "made the blood more fluid", thus aiding its passage through the engorged lung.

But, somehow, I have got out of the habit of giving carbonate of ammonia, although I do think it has helped me a good many times in bringing through a specially tough case. Other methods have come into use—or shall I say "habits"? for each one of us falls into habits of treatment—and I have discarded carbonate of ammonia, probably because of its being unpleasant to take.

We are all going to lose our old and feeble cases and infants—the great majority of them—under any mode of treatment; but those between twelve or fifteen and forty or fifty will get well. That is the "living age" for pneumonia. They will be mighty sick, but somehow they pull through. I do not remember having lost more than one or two between those limits, unless complicated by some serious disease like valvular disease of the heart. I have never been cursed with alcoholic cases and so cannot speak conclusively of them.

I am interested in the new method by diathermy, but that calls for expensive equipment which some of us do not have and hardly feel able to buy.

CLARENCE KING,

Franklinville, N. Y.

DR. RENAUD CLEARS UP A POINT

I have received several communications from physicians interested in my tonsil paper (CLIN. MED., Nov., 1925, p. 768), asking as to pressure used on tonsil with tongue depressor. Evidently, I did not make myself very clear on this point, as proper pressure cannot be obtained with any kind of a tongue depressor. It was an unfortunate mistake as this point is very important.

The pressure should be made with some instrument similar to those pictured in the article.

If it is possible to correct this false impression by a line or two, calling attention to this ambiguity in the article, it might be of considerable importance to many who are undoubtedly interesting themselves in this work.

GEO. L. RENAUD,

Detroit, Mich.

CHEMISTRY AND COLOR

To duplicate synthetically a coloring matter of plant origin, it was necessary first of all to determine its chemical make-up—to find out what elements are present in the compound—in what proportions or ratios these elementary atoms are grouped in the molecule, and to ascertain the relative weight of the latter. In other words, the chemist had to determine what is known as the structural formula of the substance, a task which was impossible until the science of organic chemistry had reached a fair stage of development. In reaching this advanced position, chemists produced—or shall we say created—many thousands of new compounds, each of which was promptly examined as to its physical and chemical properties. Some of these, as for example trinitrophenol, were found not only to exhibit color but to have the property of clinging so firmly to fabric that water fails to remove them. It was, therefore, natural that such compounds should have been experimented with as dyes, and that those which stood the test should have been utilized in this capacity.

Dyes from Coal-Tar

Not only has chemistry shown the way to the duplication of the coloring matter from animals and plants, it has also brought about the production of a large number of chemical compounds which have no counterpart in nature, but which serve excellently as dyes. Indeed, more than a thousand coal-tar dyes are now obtainable through the regular channels of trade, and procurable at a moderate price, so that brilliantly colored raiment is no longer limited to the adornment of the rich. All of these dyes, of all the colors of the rainbow, and their tints and shades—some permanent, others fugitive; some poisonous, others harmless and adaptable for food coloring;

some which dye wool or silk, others for cotton; some to be used in one manner, others in quite another—are made from substances found in coal-tar! And all this development in synthetic chemistry has come within the memory of persons now living.

It was in 1856 that a young English chemist by the name of Perkins, working on the synthesis of quinine, made some experiments with crude aniline, and obtained a mauve-colored substance. Some years later this accidental result led to the production of the first synthetic dye, which explains the popular name, aniline dyes, for coloring matter of this type, a name which has prevailed despite the fact that the great majority of coal-tar dyes are not really aniline derivations.

The practical microscopist uses a number of such stains which have selective action, and he is thus enabled to distinguish more clearly the different kinds of cells and tissues in his microscopic mount. Differential staining is used also in the technic of identifying microorganisms, some of which "take" one kind of stain, while others have an affinity for a different stain—an observation which, by the way, led Ehrlich to develop a new line of attack in combating certain diseases, namely, by medication with therapeutic agents of the character of dyes exhibiting a selective affinity for certain microorganisms which may invade the human body.

What Is Color?

But why, let us ask, is lead chromate yellow? Why is artificial mercuric sulphide red? Why does any dye or pigment exhibit the color we have learned to associate with it? Why do some substances possess color, while others are colorless? What, really, is color? The answers which science offers may not be wholly satisfactory; but they provide a clue which may eventually point to the solution of the mystery.

Let us consider another question: Is the color of a substance a specific property dependable upon the elements of a compound, and upon the ratios existing between the atoms of such elements? The chromophore hypothesis might lead us to infer this. But what shall we do with the following facts? Mercuric sulphide may be as black as soot; mercuric sulphide may also be scarlet, a variety known as English vermilion. Mercuric oxide may be yellow, or it may be bright red; and as far as chemical analysis goes, the two varieties are identical. Mercuric iodide is scarlet, changes to yellow on heating, retains this color on cooling, but suddenly changes back to the scarlet substance when it is touched—say with a lead pencil point. Cuprous-mercuric iodide is red; changes to dark brown when it is heated to about 75 degrees C.; and assumes its initial color, namely, red, on cooling, even though it be not touched or disturbed. Nor are such seeming vagaries limited to compounds of mercury. Every chemistry student knows that ordinary waxy phosphorus, which is virtually colorless, or of the color of very pale amber, may be changed to a variety of phosphorus, maroon red in color; yet both varieties are phosphorus, an elementary substance. To be sure, these varieties of phosphorus have other points of dissimilarity besides those as to color; and the same may be said of the compounds mentioned.

Selective Reflections

Since Newton's day science has demonstrated conclusively that light travels in waves which are transverse to the direction of the ray, that white light is composed of waves which differ in length, and that the light of which the human eye can take cognizance, is made up of waves ranging from about 0.33 to 0.8 of a micron in length—and a micron is 1/25,000 of an inch. Waves longer than 0.8 of a micron are invisible, and are known as infra-red rays or, somewhat inaccurately, as infra-red light, while waves shorter than .33 micron constitute ultraviolet waves, or, if you will, ultraviolet light. The x-rays are exceedingly minute as compared with light waves, while the waves tuned in by our radio are vastly longer—city blocks in length.

Now it appears that our interesting and very active little electron within the atom, by virtue of its activity, tunes in certain wave-lengths of the radiant energy which we call light, and refuses to tune in certain others; and the waves which are not tuned in are transmitted or reflected, and determine the color of a substance. Thus, a red pigment, it may be understood, tunes in all the wave lengths except those which give to the retina of the human eye the sensation of red color. A substance which reflects all the wave lengths—reflects without exercising selectivity—is white; one which absorbs all, without selective reflection, is black. But it should be understood that our common pigments do not reflect pure spectral hues, but mixtures of them.

At this point we may profitably try an experiment. Let us set fire to some wood alcohol which has been poured upon some common salt in an evaporating dish. As the wood alcohol burns, the heat generated volatilizes enough salt to tinge a distinct yellow the colorless flame first observed. If now we turn out all other light, and view, in the glow of our sodium flame, fabrics dyed in all the colors of the rainbow, we find that only the yellow fabric shows its characteristic color, all other fabrics appearing black. In like manner, red lead looks black; so does chrome green; and also ultramarine and the violet crystals of chrome alum. But lead chromate, called chrome yellow, exhibits its color under the sodium flame.

Now the sodium flame is monochromatic light, which means that it is not composite as to wave-length, but is made up of waves of a uniform or nearly uniform length (about 0.59 microns), and only the lead chromate and the dye in our yellow fabric reflect these waves; all the other colored substances absorbing this light. As the red, the green, the blue, and the violet objects receive no light waves which they could reflect, but only yellow light waves, which they "tune in" and absorb, these objects could not show color. So we are forced to the conclusion that color is *light*, and that the property by virtue of which a substance exhibits a specific color can be made manifest only when light waves of that color are made to impinge upon it. In other words, it is all a matter of selective absorption and reflection of certain wave-lengths of radiant energy.

The Unsolved Riddle

In the objective study of color we have a great accumulation of facts about wave-lengths, reflection, refraction, diffraction, dispersion, interference, scattering, selective absorption; about pigments and dyes and their chemical make-up; about chromophores and how to synthesize compounds which possess color. Science has also gone beyond the demonstrable facts in the realm of speculation, and has tried to evolve a hypothesis connecting the phenomenon of selective absorption with the electron theory. But here we might remember that a hypothesis is "a theory on probation", and that speculative thought in science means reasoning from premises not yet proven.

A professor and his young son, passing along Main Street, encountered an elderly person with a red nose. "Homo sapiens proboscis rubiflora", said the professor to himself in an undertone, for he had the habit of cataloging all strange specimens which came to his notice. But the little boy cared nothing about biologic nomenclature, and less about Latin. His was the curiosity of the true scientist. "Why", asked he, "is that man's nose so red?"

Why, indeed? Much could be said on that subject. It could be dealt with from the standpoint of physics, or of chemistry. It is a problem in pathology. And as a theme for a moralist or the humorist a red nose is inexhaustible.

But when it comes to the fundamental question, "why", our professor deemed it wise to say to his son—very simply—"Color, my son, is one of the great mysteries, and a mystery is something about which we know only enough to make us curious."

And this, indeed, is what science is still compelled to say about color. We know just enough to make us acutely curious.

J. W. Sturmer, Ph.M., Phar.D.,
Dean of Science,
Philadelphia Coll. of Pharmacy and Science.

Abstracted from *Amer. J. of Pharm.* for May, 1925, by permission of Dr. Sturmer.

PARATHYROID IN FRACTURES

Collip's work in connection with the effect of the parathyroids on the metabolism of calcium and phosphorous is bearing some curious fruit. The *Daily Science News Bulletin*, of Washington, D. C., states that Dr. Ogawa, in Japan, has found that if rats with broken legs are fed parathyroid glands the production of new bone at the site of fracture is twice as great as it is in those which are not so fed.

It will be interesting when we are able to study the results of this form of treatment in human beings.

PHILOSOPHY

As representatives of a major institution, it is proper that medical men should maintain their appropriate place in the front ranks of society in its onward march, and should be pioneers, free and independent, and keep in touch with what is being done in other lines of endeavor while moving forward along the lines that are particularly their own.

To this end it is essential that they be not swept off their feet by laymen who

"see things", even though these things be real.

That is why a protest is in order against the appearance in a medical journal of any *ex parte dictum*, except for the avowed purpose of provoking discussion.

Philosophers and physicists have sought knowledge from two different directions; from above, in attempts to understand ourselves and our minds, and from below, in attempts to understand cells and their products. Each of these endeavors is aimed to go all the way through, but, as matters stand, it looks like another case of "never the twain shall meet".

Medical science shows that better knowledge comes with greater growth of gray matter. A study of the medical sciences ought to show to the physicist good reason for a more inclusive comprehension of forces, and to the philosopher that there is no reality that is untouched by the laws of nature.

Medicine is right because it works; what won't work is incontinently dropped. Medicine is now uniting East and West; and sanitary science is spreading the idea of brotherhood—love your neighbor—all over the world.

There is no more promising agency than medicine for the clearing of the way to a better understanding of ourselves and of the world in which we live.

Referring again to Redfield's "Vitalizing Biology" (CLIN MED., Oct., 1924, p. 701), instead of agreeing that life is a form of stored motion, I would argue that vibration is one mode of force while life comprises the manifestation of a number of forces.

For the discussion of "Protoplasmic Resurrection" (CLIN. MED., June, 1925, p. 386), let me criticize this as another case of concentrating too closely on one phase of the subject.

"Somewhere, during the process of building cells from food, the psychic element has entered the protoplasmic combination, and the resultant cell is alive. The dead building-stones which once were a part of some living organism—plant or animal—have been resurrected. They have been made to live again."

"Today, a school of investigators in physiology, chemistry and dynamics has nearly established the hypothesis that all function has vibration as its basic element."

Concerning all of which I can only point out that if the school of investigators in chemistry, physiology and dynamics, which has nearly established its hypothesis, and in which Dr. Gage believes, had included biology in its curriculum, he would not have started in this way.

The beginning of biology is: The only known origin of cells is other cells.

Cells are not built up from food. There is no resultant cell as a consequence of feeding. Building-stones were never alive and so are not resurrected. Hormones and vitamines survive digestion and we may find additional things of this category as our knowledge improves, but the characteristic activities of living things are inherent in living protoplasm and protoplasm does not survive digestion. That the "psychic element" has entered the "protoplasmic combination", somewhere, is not a carefully prepared statement.

There is more, too, that this school of investigators ought to consider. Dr. Gage treats of life and death but he refers to life in one form only—only in the form of multiple-celled organisms. In the life history of simple one-celled forms there is no death. In the presence of food, bacteria grow, primarily in individual bulk; secondarily in numbers. In the absence of food they take on the spore condition and wait. Complex forms die as victims of their own complexity. Dependence upon parts means acceptance of liabilities. Cells and parts suffer hydrolysis when the blood supply is interrupted unless sooner rescued, as Dr. Gage describes, and preserved in a refrigerator for surgical transplantation.

Of equal importance with biology, in a life study, is a similar branch of medicine —sociology. We do not cover the subject of life if we fail to recognize society as an *order of nature*—an established and methodical succession in the steps of the growth of the world.

Again, an explanation of life is insufficient that concerns itself only with function. Life is dissociated from chemistry and dynamics and is beyond explanation in terms of physics, in the fact that it is always manifested in individuals. Physicists have failed to account for individuality. Surface tensions have been studied, and the behaviors of colloids, and the relationships between surface areas and energy output, but there has been nothing found in any of this work that is very convincing compared with the importance of individuality when considered as a way of growth. Growth in the world of life is by individuals. And the end-product, for individuals, is personality.

Does personality die? Aye, there's the rub!

I'll point out this, however, apart from the unaccepted—though not disproved—direct testimony on this matter, the question of survival hinges on the question of reality, though it may be determined, for many minds, by the conviction of purpose underlying the warp and woof of things.

There is such a thing as a philosophical connection of facts that cannot be weighed in scales or measured by a tape, but may yet be sensed and adopted as a basis of sure knowledge. And this may be the highest form of exercise, the best expression of personality and the supreme tonic for gray matter.

JAMES JOHNSTON,

Los Angeles, Calif.

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[Philosophy has been a hobby of ours for a good many years, and because we believe that many of our brethren will enjoy sinking their intellectual teeth in a good, substantial abstract controversy, we are glad to publish articles like those of Redfield's and Gage's, and discussions like this and Dr. Johnston's other contribution, on page 633 of the September, 1925, CLINICAL MEDICINE. We would welcome more of these, even though we do not agree with all statements made.—ED.]

WHAT IS LIFE?

Medical men are employed to save life. Life must be a definite and valuable thing, otherwise men would not pay money to have it saved.

What is life?

If life is a thing we know in other forms at other places by other names, and in regard to which we have accumulated a considerable body of scientific information, then medical men can use that information in their business of saving life. But, if life is something apart and wholly distinct from everything else on the face of the earth, then it is out of the range of scientific investigation, and medical men must continue to grope and guess in their efforts to save life.

Physics is the science of energy, and physicists have developed a large number of scientific tests by which they determine the presence or absence of energy, and the transformations through which it goes. By applying tests of the kind that physicists use, I am able to identify life as being a form of energy and to determine that it is governed by the generic laws of energy.

If this identification is correct, then there is here a body of information of great value to medical men. Or, if life can be identified with some other definitely known thing in regard to which we have scientific information, then that information will be of value in life-saving operations. But, if life cannot be connected in any way with known things other than as a temporary inhabitant of an organism, then medicine cannot be a real science—it must remain nothing more than an art based on a collection of empirical facts.

From the above consideration, it seems to me that the first and main objective of medical men should be to determine as soon as possible what life is and what relationship it has to other things known on earth. "Biology" means the *science of life*, but it is not possible to have a science of an unknown thing, or a science of saving an unknown thing. The term "Vitalizing Biology" means putting life into the science of life.

What is life?

CASPER L. REDFIELD,

Chicago, Ill.

CELLS WITHOUT FOOD

"Silence is the College Yell of the School of Experience."

Don't argue. If you argue with your mental superior, you are tiresome and ridiculous, in his eyes.

If he is your mental inferior, you can't gain your point, and you will probably lose a friend.

Intelligent people cannot argue about a fact.

Inasmuch as I have faithfully tried to make the above quotations my life texts, I feel that I should abide by them, in this instance, but I cannot refrain from assuring Dr. Johnston that I believe *almost* every word that he has written, and I wish to congratulate him.

I especially believe him where he states that, "The only known origin of cells is other cells."

Inasmuch as I am not an arguer, both because of my distaste for argument and of my inability in that respect, I wish to ask that, if, as Dr. Johnston states, "Cells are not built up from food", he try to build up his body cells without food, for a

short period, say, one to two years, and then come to us, at the end of the period, with a resumé of his experience.

If Dr. Johnston successfully meets this test, argument would be superfluous, and only abject apology fitting.

W. V. GAGE,

Denver, Colo.

A COUNTRY DOCTOR DEFINED

If you can set a fractured femur with a piece of string and a flatiron and get as good results as the mechanical engineering staff of a city hospital at 10 percent of their fee;

If you can drive through ten miles of mud to ease the little child of a dead-beat;

If you can do a podalic version on the kitchen table of a farm house with husband holding legs and grandma giving chloroform;

If you can diagnose tonsillitis from diphtheria with a laboratory forty-eight hours away;

If you can pull the three-pronged fishhook molar of the 250-pound hired man;

If you can maintain your equilibrium when the lordly specialist sneeringly refers to the general practitioner;

If you can change tires at 4 below at 4 a.m.;

If you can hold the chap with lumbago from taking back rubs for kidney trouble from the chiropractor;

Then, my boy, you are a Country Doctor. —H. W. DAVIS, in the *Kansas Medical Journal.*

TREATMENT OF INTESTINAL TOXEMIA

1.—A low carbohydrate diet; absolute avoidance of sugar, potatoes, cereals, bananas, and all flour-containing foods except one slice of bread with each meal. Meat, fish, eggs, milk, and green vegetables are freely taken, with a moderate allowance of fruit.

2.—An enema consisting of 2 quarts of warm water plus 2 drams of ichthyol, given with slight force from a pressure bottle, two or three times a week, with a short rectal tube, the patient lying on the left side and then turning on the right. The ichthyol enema, given in this manner, is more efficacious than the colon irrigation, is easier on the patient, and is infinitely simpler to administer. It is absurd to say that it cannot reach the cecum, for the ordinary barium enema certainly does.

3.—A tablespoonful of bran stirred up in a glass of water night and morning.

4.—At least 2 quarts of water daily.

5.—A tablespoonful of mineral oil night and morning.

6.—Strict avoidance of cathartics.

7.—Absolute regularity in going to stool.

These measures bring about a sense of well-being that the patient has not known for years. The constipation is actually cured.

ARTHUR F. KRAETZER,
Bellevue Hospital,

New York City.

(Abstracted from *Med. Clin. of N. Am.* for September, 1925.)

DIAGNOSIS REQUESTED
(An Autopsy Would Have Helped)

I should like to submit for discussion by the other readers of CLINICAL MEDICINE one of my cases, which, by the seriousness and rapidity of its course, did not allow me to state the proper diagnosis.

Here is the history: On October 31, I was called and found a young man, 18 years old, who complained that his stomach felt too full, although he was hungry, and whenever he started to eat something, he could not finish it.

I examined him and found only abundance of gas and atony of the stomach walls.

I prescribed mineral oil and a mixture to stimulate gastric contractions.

There was no fever at all and everything else was negative.

In a day or two this patient got up from his bed, began to feel much better and was able to eat the diet which I prescribed.

On November 6, I was called to see him again. I examined him and found: temperature 103° F.; pulse 110; respirations 28. He complained of pains in all his joints and bones; headache; and a very severe pain at the end of the spinal column (last sacral vertebra).

On account of this peculiar pain, which attracted my attention, he could not turn around, or make any movement. The patellar reflexes were normal; the pupillary reaction was normal both to light and accomodation; the chest examination was completely negative.

I made a diagnosis of influenza and prescribed treatment, advising an ice-bag to

his head and a hot-water bag for the sacral pain.

The next morning, November 7, I found the patient much better. The fever was only 100° F.; the pulse 90; respiration normal. All the pains were very much relieved and he could move freely in bed. The sacral pain had completely disappeared. I noticed only a certain slowness in the sense of sight, as he could not read the time very promptly. The pupils were, however, normal to light and accommodation and the patellar reflexes were also normal.

On November 8, I was called hurriedly to see the same patient, who had become very seriously ill. His father told me that the boy had done well until 5:00 A. M. that day, when his condition completely changed very suddenly.

I examined him at 11:00 A. M. and found him in a delirious state. The temperature was 104° F.; the pulse 120; respirations 24. He was unable to understand anything, and could not recognize anyone and was repeating incomprehensible words. He would take no medicine, but kept his mouth forcibly closed.

There was no rigidity of the neck or of the muscles of the back and Kernig's sign was absent. Patellar reflexes were diminished in both knees; the pupillary reaction was positive to light but negative to accommodation; a slight mydriasis was present.

I realized the gravity of the case and advised the family to take him to the hospital as soon as was possible. He was taken to the King's County Hospital before I had been able to state a diagnosis.

On the night of November 9, I heard that this patient had died. I inquired what was the diagnosis made at the hospital and was informed that no satisfactory diagnosis could be stated.

I hope I have described the case sufficiently clearly to enable other doctors to express their own opinion about it, and I hope that, by the discussion in your Journal, I will learn the cause of death in this case.

G. LOMBARDI,

Brooklyn, N. Y.

FRACTURES OF THE ELBOW JOINT

Opinions as to the best method for treating fractures involving the elbow joint vary widely, as evidenced by the following quotations from the works of recognized authorities:

Fig. 1.—The fracture viewed with the arm extended.

"Fractures of the internal epicondyle, of the internal condyle, of the external condyle

Fig. 2.—Position of the fragment in acute flexion.

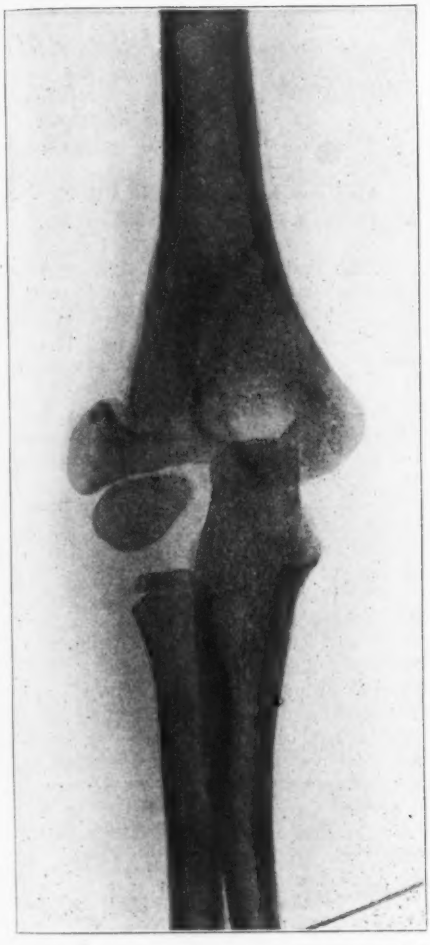

Fig. 3.—Approximate reduction in the extended position.

and T fractures into the joint are best treated, as a rule, in the acutely flexed position."—Scudder.

"All cases of fracture and dislocation about the elbow, with the exception of a fractured olecranon, should be treated with the elbow in the position of full flexion with forearm supinated."—Page and Bristow.

"Without regard to treatment in extreme flexion as advocated by some, or in full extension as advised here, rather than immobilize the joint for three weeks it were better to apply no splint."—Wyeth.

From the statements of these authorities one would infer that fractures involving the elbow joint could be put up in acute flexion, in extension, or with no fixation at all.

Fig. 4.—Union.

The difficulties sometimes encountered are well illustrated in the above x-ray photographs, the lesion being a fracture of the external condyle of the humerus, the fragment carrying the capitellum outward and being rotated at the same time.

R. STEWART MACARTHUR,
Los Angeles, Calif.

TREATMENT OF PNEUMONIA

The December number of CLINICAL MEDICINE certainly contained a vast amount in detail about Pneumonia. Years ago I learned the fundamental principles of the treatment of this disease through the writings of Abbott and Waugh and by much study and experience I have worked out a system.

I do not use any local remedy, such as clay poultices, jackets or pads, as I have never seen the least benefit from them. I greatly doubt the value of vaccines and serums, or quinine, strychnine and a vast number of other drugs. The textbooks are nearly silent as to curative remedies. Nursing and stimulating seem to be the chief suggestions. No wonder the profession thinks itself limited, and many argue that the disease runs its course and preach fresh air and supportive treatment.

A few days ago I was called to see a lady, 76 years old. She had been given up by her family physician. I found she had pneumonia; pulse 144; nausea, and vomiting. It was difficult to determine whether she was dying or not. I gave her the following treatment:

25 granules aconitine 1/800
12 granules strychnine 1/60
16 granules digitaline 1/64
Water 24 teaspoonfuls Mix.

Dose: 1 teaspoonful every 30 minutes until 6 doses, then every 45, until 4 doses, then every hour until pulse is 90.

The next morning, to my surprise, her pulse was 90; she had slept 2 hours and took nourishment. I then put her on echinacea, calcium sulphide (granules are the best form to use) and Calcidin; later triple arsenates with nuclein to tone her up. The old lady recovered.

The drugs mentioned are about all I know which may control and cure pneumonia. Strychnine, digitalis, carbonate of ammonia or alcohol may have to be used as stimulants and expectorants. I treat pneumonia on the plan outlined with *great* success.

Aconitine, digitaline, veratrine, and strychnine are the four alkaloids to control pain, fever and the pulse and to produce a complete equilibrium of the circulatory and nervous systems. Aconitine must be used all the time, generally with one or two of the other alkaloids. The secret of success is knowing which other alkaloid must be used with the aconitine to suit the condition of the patient. If we get the right combination of the alkaloids it acts like a miracle. If the wrong mixture is used the results are not so good.

It would take a lecture of an hour or more to demonstrate just what other alkaloid to use with aconitine, or how to fit the treatment to the condition, for no two patients are alike.

This treatment promptly shows to the doctor and the patient that something of great value is being done. I give no morphine or any coal-tar products to reduce fever, as this combination does the work and brings the patient rest and relief.

I. N. MOYERS,

Speedwell, Tenn.

AN IMPORTANT PROBLEM IN ECONOMICS

I think that editors are usually glad to hear from readers regarding subjects the latter would like to see treated in the columns of the journals. I should like to take the liberty of calling your attention to the biggest problem in the life of the modern progressive medical man, and asking you if it is not possible to get some articles on it from men whose suggestions will carry weight.

We all know, and yet are all constantly being reminded, that it is dangerous to consider any patient's complaint as trivial, no matter how trivial it may seem. No matter what the symptom, the patient should have a thorough examination and careful and thorough treatment. Otherwise, errors and disasters may result.

But this kind of work costs money; and a patient who comes in complaining of a slight cough, or a little urgency of urination, does not want to pay from fifteen to fifty dollars before he gets out. He expects to get out for a couple of dollars or five. And, for that price, it is a sheer impossibility to give the proper service in examination and treatment.

What is the solution? Shall we let things slide? I would say that we ought to be good enough salesmen to "sell" our ideas to the patient, so that he *would* be willing to pay what is necessary in order to get good service. But I am *not* a good enough salesman. Neither is any medical man who has spent most of his life in learning the scientific end of the work.

MILES J. BREUER,

Lincoln, Nebr.

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[This is one of the most important problems confronting the practitioner today. Many of the specialists seem to have solved it, and it is probable that some of our readers who are in general practice have solved it also. How did you do it?

If you will go into some detail in the matter, for publication, you will confer a very real and very great benefit upon a large number of your professional brethren.

We submitted this problem to several prominent physicians and medical educators, but they decline to discuss it—perhaps because they have never met the problem or have not solved it.

Who will be the first to offer suggestions? We will publish all reasonable replies and hope that they will be numerous.—ED.]

CLINICAL USE OF THE PARATHYROID HORMONE*

As an active extract of the parathyroid glands of oxen will shortly be available to the profession, it is well that a word of warning in regard to its indiscriminate use should be uttered. As only limited experimental data are available, it is impossible to state as yet what are the exact uses and limitations of this new hormone.

That it is the essential internal secretion of the parathyroid glands, as is insulin the essential internal secretion of the pancreas, would seem to have been amply proven. The four salient facts which laboratory study has established in regard to the active parathyroid extract are: (1) that it affords complete replacement therapy when injected into parathyroidectomized dogs; (2) that it causes a mobilization of calcium in the blood; (3) that overdosage (in dogs) produces a typical train of symptoms ending in death; (4) that physiological standardization of the potency of active extracts can be accomplished by determining the blood serum calcium mobilizing effect of single injections into dogs.

The response of animals of different species to injections of the hormone varies enormously; thus, the dog is highly sensitive to this internal secretion, while the rabbit is relatively immune.

A unit of potency has been defined as 1/100 of the amount of active extract which will produce an average increase of five milligrams in the blood serum calcium of dogs weighing twenty kilos. It has been found that fifteen units per day given by the subcutaneous route is adequate to keep a totally parathyroidectomized dog in normal health. It is probable, therefore, that this amount of the hormone is a fair approximation to the daily production of the intact glands in the normal dog and should be a useful guide in determining dosage for the human subject. Small doses repeated at frequent intervals (a few hours) are cumulative in action and will eventually raise the blood calcium to dangerous levels. As no satisfactory antidote has as yet been found which will relieve the symptoms resulting from overdosage with the hormone, it cannot be too strongly emphasized that overdosage must be absolutely avoided. In clinical practice, therefore, treatment with the hormone should be controlled by blood serum calcium determinations until definite information is available as to adequate dosage and tolerance limits. From the clinical data at present available, it would appear that small doses (ten to twenty-five units) repeated daily or on alternate days may be given with safety. If untoward symptoms, such as nausea and vomiting, should occur, the extract should be withdrawn.

It has been shown that overdosage phenomena deliberately produced in dogs are favorably influenced by intravenous saline or glucose but this treatment, though helpful, has by no means the virtues of an antidote.

J. B. COLLIP.

*Reprinted from the *Canad. M. A. J.*, November, 1925.

INTRADERMAL SALT SOLUTION TEST FOR TOXEMIA OF PREGNANCY*

The characteristic symptoms and the signs in the urine and blood pressure frequently appear so late, in cases of the toxemias of pregnancy, that little time is given to correct the conditions before eclamptic seizures occur. This test will sometimes assist in making an early diagnosis in such cases.

The test is based upon the facts that the toxemic condition is general throughout all the body tissues, and that there is a *tendency* to edema before that condition can be demonstrated; and upon the observation that if salt solution is injected, intradermally, in edematous patients, the resulting wheal disappears more quickly than it does in normal persons. The shortening of the disappearance time of the wheal may thus be the earliest sign of impending edema from toxemia.

The test is performed as follows: 0.2 Cc. of an 0.8 percent salt solution is injected, intradermally, on the flexor surfaces of the forearms or the mesial surfaces of the legs or both. It may be well to make two injections a centimeter or two apart, so that the disappearance of the *furrow* between

*Abstract of a paper by Dr. A. L. Lash, of Chicago, read before the Chicago Gynecological Society, January 13, 1926.

the two wheals can be used to determine the end point of the reaction.

The time of making the injection is carefully noted and the site of the injection is frequently examined, by touch, to detect the disappearance of the wheals. More delicacy is obtained by dusting the area lightly with talcum powder before palpating. The time of disappearance is noted.

A considerable number of normal persons (47) were tested by this method and the disappearance time was found to vary from 62 to 101 minutes, with a mean of 82.6 minutes. In 46 cases of late toxemias the variation was from 14 to 67 minutes, with a mean of 34.5 minutes. In 17 cases with eclamptic convulsions the disappearance time varied from 7 to 52 minutes, with a mean of 28 minutes.

The reliability of the test is evidenced by the fact that it follows the blood pressure and urine findings in all cases; that the disappearance time promptly increases after delivery, parallel with the improvement in the urine and blood pressure; and that, in cases of poor prognosis, the time continues to decrease.

The importance of the test is that it may sometimes be obtained at a time when other signs and symptoms are insignificant and thus permit early hospitalization and vigorous treatment of these cases.

It is quite probable that further experience will show that it is applicable to cases of toxemia due to scarlatina, nephrosis and the like, and its routine use in such cases would be harmless and might be of much value.

G. B. L.

CONVERSING WITH THE DEAF

I have a patient who is very deaf, and I have found that, by adjusting my stethoscope in her ears and speaking into the bell of it, I can converse with her quite readily.

KATE K. CLARK,

Cable, Wis.

AN ANTERIOR METATARSAL SUPPORT

There are so many devices on the market which are supposed to relieve anterior metatarsal suffering that an apology is needed when one presumes to add another to the existing number. However, the small appliance which I am about to describe has a few advantages which justify bringing it to general attention.

It can be made in the office, is durable, "hits the spot every time" and the whole cost is about ten cents.

First of all, the metatarsal "raise" has to be outlined on the plantar surface of the foot; this is done with an indelible pencil, posterior to the heads of these bones.

Take some bond paper, moisten it with water in that area where we expect the patient to place the afflicted spot, and then proceed to draw the outline of the whole foot with indelible pencil. When the patient lifts his foot from the paper, an imprint of the metatarsal "raise" will be found printed thereon.

This paper is tacked to a board and from a piece of three-eighths inch hard felt an anterior metatarsal "raise" is cut and bevelled, which in turn is pasted on the paper in its proper place.

Take a leather sole (shoe factory reject), and, after having soaked this in water until pliable, mold it over the felt and with small tacks fix it strongly around the raised part.

One more tack at the toe and another at the heel complete the job.

Let it dry for a day and find then that the leather is as hard as before and the "raise" has become a natural and permanent part of the insole.

The tacks are removed and, as the outline of the foot was drawn in indelible pencil, we find its imprint on the reverse side of the leather.

Take a sharp knife and cut the shape according to this penciled line, taking care to cut about an inch posterior to the heel mark, for in fitting the support we can always cut off more but never add. Anteriorly to the metatarsal "raise" we cut the insole straight across, beveling the edge.

The piece of felt is now removed from the paper, glued to the concave side of the "raise" on the insole and the appliance is ready.

The great advantage that I see in making such a support lies in its correct fitting, its light weight, and in the fact that the "raise" does not shift when the patient puts his shoes on. This shifting always happens where some material is simply pasted on top of an insole.

JOHN LONG,
Podiatrist

Brooklyn, N. Y.

Reprinted from *Med. Times* for Sept. 1925.

PNEUMONIA TREATED WITH CREOSOTE CARBONATE

Carbonate of creosote, given early and in large, frequent doses, is as near a specific in pneumonia as quinine is in malaria. Out of fifty cases of all types I had only two deaths; one was a patient treated by another doctor for three days, and the other I did not recognize until the third day. They died, one in 36 hours, the other in 72 hours after diagnosis.

I have had children and old people to deal with; two past 80 years of age; one boy 8 years old with a mitral regurgitation; one case following scarlet fever; etc.

I will not try to go into full details. I give 10 to 15 minims of carbonate of creosote every 2 to 3 hours, to adults, and 5 to 8 minims to children under 14 years of age. Watch the temperature and it will go down below normal in 2 or 3 days. I have never had a case run the nine days we used to think customary.

This drug is the physiological specific for pneumonia. By depressing the sympathetic center, it causes dilatation of the arterioles, thus enabling arterial blood to circulate with greater freedom through the diseased area.

It has been used in Europe. Out of 1130 cases, treated by various physicians and collected by I. L. Van Zant, the mortality was only 5 percent. In 16 cases treated by Van Zant, there were no deaths. Tuttle and Carter recently reported 600 cases treated by them in six years, reducing their mortality from 22.8 to 7 percent.

Baldwin, of Rome, gives as much as 30 to 40 minims every 3 hours, with no deaths. Scott and Montgomery had a mortality of 14.9 percent in 67 cases, but they gave it every 4 hours. I give large doses and as frequently as every 2 or 3 hours.

It may be given in capsules to adults and to children in glycerine and peppermint water or in some good cough mixture.

The other treatment of the patient should be according to conditions, meeting complications as they arise; give codeine for the pain; secure plenty of warm fresh air, and you will not dread your pneumonia cases as before.

When I can not get carbonate of creosote, I use carbonate of guaiacol in the same dosage.

DORMAN J. CLARKE,

Toledo, Ohio.

[*Concluded from p.* 113]

of the *Journal of the American Medical Association.*

"Angina Pectoris". Doubtless the best description of the surgical treatment of angina pectoris has been published in French by one of the pioneers, Professor Thomas Jonnesco, under the title: *"Le Sympathique Cervico Thoracique"*. It is also a splendid atlas showing every principal step of the resection of the cervical or thoracic sympathetic for the relief of exophthalmic goiter, glaucoma, epilepsy and angina pectoris. Our experience with the last named affection has been exceedingly discouraging, but we have only one case to report on, so our personal opinion is of doubtful value. If you can read ordinary French, you will find all the desired information in the above named atlas-monograph. Your book seller can get it for you, or else write the publishers, Masson and Co., 120 Boulevard St. Germain, Paris. We are informed that there is no duty on French or German medical books, so your book seller should be satisfied with a middleman's profit.

The Leisure Hour

Conducted by GEORGE H. CANDLER, M. D.

"Hurry, Doc"

"YOU must hurry, Doc"; this, over the telephone
Was all the same to him. Detect the fear
Of death in that far voice? He had heard before.
It was the fourth call since Thursday and he
Could never collect, but he would hurry—yes.

The road is long and winds over the hill.
Ditches washed by the rain cut across the way.
But the moon is up and the cicadae cry,
Damp is the air in the valley. Guiding the wheel
Is monotony on a night like this, and so,
You sing the songs of Omar and of Kipling.
It's the moon! But, "hurry, Doc," the child might die!

Now the road rises from the valley. A rabbit
Blinks into the flickering lights of the car.
The banks of the road are black cathedrals.
That white shape bending there is not a ghost,
Only a fragrant elder bush in bloom.

What sentiments! What dreams! What memories!
Those gay days in school and days of internship—
Of love and marriage—but, "hurry, Doc, hurry!"

Why did you take the long road, the hill road,
When the prairie road is quicker?
Yes, it's the scents and the moon and the valley road;
The jolt and the bang of the car, and the velvet night—
But you must *hurry*, Doc, and save your poetry.
"Where the River Shannon Flows", it's the moon and you're Irish;
But how *can* you sing? The child may be dead—"*hurry*, Doc!"

The moon is behind a cloud and the covered bridge
Rattles under the wheels. You stop! You stop
To watch the silver minnows when the moon comes back!
And loiter across the bridge. You stop to pick
A spray of wild flower, lavender in the night,
And leisurely inhale the breath of night fragrances!

"Hurry, Doc, Louise may be dead—*hurry!*" . . . .
Alas, Louise *is* dead!

Raymond Kresensky.

(It is always a good idea to "see ourselves as others see us", therefore, this rather remarkable poem is presented for the consideration of those fellows who are, at least *supposed*, to race with Death.—G. H.C.)

Tents, Tyrants and Things

THE *"A Bas Les Rudolfos"* article, which appeared in this department last December, seems to have attracted somewhat more than passing attention. Some people applauded, some were (more or less) "shocked" and some inquisitive souls wanted to know if there was any Federal law against having camel's-hair and silk-lined tents in one's back yard. These were told that, to date, at least, no such law exists, but that camels' skins are getting scarce; further, that even tho' such a law were passed, there has yet arisen no one greater than Volstead to enforce it. As he has caused us to discover, laws that don't fit the public's convenience are apt to be given the hah-hah. Moreover, those who never hah-hah'ed before follow the horrible example of their more sinful neighbors and hah-hah, too. This fair land of ours is now *full* of hah-hahs: Heaven forfend that it also become infested with *Tents!*

I am particularly delighted to have drawn from one "Doctor's Wife" a frank expression of *her* opinion on the Sheik question. Her letter is *so* good that (by permission) I reproduce it in full. I might, perhaps, be pardoned for just mentioning the fact that, in writing me relative to the use of her prior letter, the lady postscripted (they *all* P. S. and P. P. S.) to this effect: "I'll bet *you're* fat." Now, as the original letter makes it plain that a *fat* doctor and a Sheik are, in her opinion, "incompatible", I am evidently regarded as "harmless"—I *think* that is the proper expression. Anyhow, I do now weigh over 150 pounds, whereas, a summer or two ago, I went only 145 pounds. What time does to us is, alas! indeed beyond expression!

Here beginneth the epistle—which will put the crimp in many an M.D. who has heretofore carried an *arrogant abdomen.* (How's that?)

—

"Dear Dr. Candler:

"I don't belong to any class of 'wimmen letter writers'.

"However 'frail and fanciful' I may be, I don't love Rudolfo Valentino too much.

"I can exist with few—or no—thrills. (I'm a doctor's wife.)

"Neither am I dependent upon the editor of the *Chicago Tribune* to put ideas into my head; however—being the wife of a practicing physician who is the darling of a large practice—I must confess that my mind is seldom more flexible than a cold fried egg, because, along with the glories and honors which HE so graciously bestowed upon me at the marriage altar, came duties—galore—that leave little time for thoughts of poesy, passion, physical perfections, and esthetic embraces.

"I'm bigger than even a Doctor of Medicine, who is jealous of a movie star, and if I were jealous of my own little babies, sooner than own it, I should 'go jump into the Chicago River, and there very m i s e r a b l y and odoriferously, d-r-r-r-rown!'

"We—I mean doctors' wives—recognize our weaknesses. We're blithering idiots, all of us, and we never showed it more plainly than when we fooled ourselves into believing that one M.D. needed a wife. What he needed was a valet, a chambermaid, a cook, a book-keeper, an office girl, and a wise old OWL to wait up for him nights. There is not a mother's daughter of us—NOW—but realizes that the best there is in HIM goes to an ungrateful public, while the most he brings home is (literally) BACON.

"We are proud of the ability and skill which our doctor husbands have acquired in their chosen profession; at the same time we realize (but we are too good sports to squeal about it) that they are only about one-half of one percent husbands. An object passing across a screen might indeed serve our purpose as a thr-r-ill producer, almost as well. It is a bit unusual, though, that this knowledge has seemed to penetrate one doctor's skull, and very wonderful indeed that—having once penetrated—he would confess it, even to himself.

"I am not saying doctors don't love their wives. Indeed they do! They love the pur-r-r-r of their engine, too, when it is getting them on in the direction they wish to go. It's man's nature to love the things best which serve him most. His best love, though, is always given especially to 'The Son of His Father.'

"Bein' a doctor's wife, I don't have to go to 'the poor man's theatre' for thrills. MY thrills come from smiling until my face cracks at people in whom I am NOT interested, beyond the welfare of my

husband's practice; my greatest luxury is being able to forget my own aches and pains—if I happen to have any—in listening to, and sympathizing with, others who seem to think they have greater ones than I.

"And before we trick poor hubby into being the sheik with the sandals, bottle of attar of roses, and bath-robe, suppose we do some dissecting of the sheik, just to learn if there could possibly be a thr-r-rill connected with it. We might consult some dependable dictionary, or encyclopedia, and actually learn—before we use it again—just what the word sheik means. With my knowledge of the word, there couldn't possibly be one single thrill in having a sheik enter MY silk-draped tent. The true meaning of the word is 'An Arabian Elder'. If one is versed on Arabia, one knows that their Elders are very elderly, indeed. These Elders are chosen by the people, and, while they are most honorable, they MUST be 'TOO OLD TO WORK.' They are seldom chosen before they have reached their sixtieth mile-post. Sounds kinder thr-r-rilling, doesn't it? Little wonder that the word excites anger in the doctors'—and all other men's—breast. But, suppose that the word means what some folks, who depend on editors of dailies to enlighten them, think it does, I can hardly imagine friend husband playing the role very successfully. In the first place—like most of his profession—he has too much avoirdupois to do much r-u-s-h-i-n-g. He might even r-u-s-h, once, if some woman whom he had never seen chanced to be reclining on said couch, but my presence would most certainly ruin the picture, for once dear hubby saw me, he would certainly stop r-u-s-h-i-n-g long enough to have me unearth that Asiatic lunatic bath-robe which is to appear in his picture, because, in my presence, he is as helpless as a year-old baby, and before he could get up speed again I am sure he would want me to enlighten him as to the calls waiting, etc. The picture spoiled, he'd continue by putting down his day's work, winding his watch, turning out the light, tumbling into bed, and snoring like the DIVIL.

"We're asking for nothing more, however. Time was, when we kinder hoped, but passions and desires become deadened after a while, along with our other blessings. And by the way! We DO have blessings—plenty of them—for instance; doctors' wives generally get good board, because the average M.D. is going to EAT; decent housing, too, because his majesty's pride would be hurt, if he, in his position, were unable to keep up appearances; and, since he has the house, we live in it, as a natural consequence. And we get to use our imagination, too, especially when our dear husband's interests are at stake. Fact is, most of us soon learn to lie beautifully. That accomplishment alone ought to earn for us our board and keep.

"Speaking of a week of Delirious Abandonment! Who could imagine anything to equal the thrill of it!! And speaking of luxuries—what could be more luxuriant than an honest-to-goodness week's spree, with the cares of home forgotten; lots of clothes to wear; plenty of money to spend; with time to go Rudolphing—or any other 'olphing' that might suit our fancy!! But, pray, who could keep the calls, and smile, and tell little white lies, and do the many other things for poor dear husband while we are away? And, come to think of it, aren't collections a little bit slow just at this particular time?"

One Doctor's Wife.

—

Now, I've not decided whether I'm squelched for life or not, but I would like to know what Dr. Freud would find between these lines. Perhaps just what I tried to say—and failed to put over.

"The tyrant's hand is at thy throat,
Poor Radio Fan;
You'd better rise and rock his boat
Now, while you can."

Because, sooner or later, if you don't you'll have to listen to the "Chain" rattle all night and every night and the "fishin'" will be tee-totally ruined and there'll be no more thrills or anything! All of which means that the highly esteemed Radio Corporation of America is growing so corpulent that it wants the whole air—and control of everything which will enable us, poor boobs that we are, to "get things" out of it. If you tune in intelligently, if you think as you tune, you must have noticed that it is daily growing more difficult to get away from somebody's tires or Blueberry gum. Escape these by moving on a few points and you find more gum and more tires. Your set, indeed, is "gummed up"

and you feel tired. Still, it is not "time to retire" yet—mercifully Fisk hasn't signed up for air space—so you try all over again and still, on high, medium or low wave-lengths, you hit that infernal "Chain". Only *one* station on *that* wave, moreover, yet other old (and good) stations have either to pirate a wave or go out on one shared by some twenty-five other broadcasters. Something is very, *very*, VERY "rotten in Denmark"—and you don't have to take a sea-voyage to discover the source of the smell, either.

Further, if you are at all interested, you will note that slowly but firmly the trust is closing down on anyone who dares to produce a "super"; even to sell a suitable transformer is to "contribute to an infringement" so one must soon either buy a Radiola (this year, it's the "28") or be content with a neutrodyne of lower efficiency and selectivity. Next year, doubtless, you'll be told that to "keep up with developments" you must have a "29"—or something—which will be operated by a plug-in unit at three or four hundred bucks. Then, when you've got it, you can listen to the chain, or fish for the few independent stations which don't interfere and so have been allowed to live. The air, and the means of receiving sounds therefrom, will have been pretty satisfactorily hogged. What are you going to do about it? Not very much, I'm afraid. One doesn't accomplish *much* when a really fat corporation is on the other side; nevertheless, you *can* watch the radio bills coming up, and now under consideration, and you can let your state senators know what you think of the measures. Further, you can post yourself, and so act intelligently, by securing essential facts regarding the situation. Drop a postal to the Broadcasters' Assoc. at Muscatine, Iowa (KTNT.) —they are still allowed to use the air—and they'll tell you a few things. So will McDonald, of Zenith.

Per contra, you'll hear a lot of very plausible stuff about the wonderful things the "big boys" have done; also about the more wonderful things they propose to do for—but chiefly *to*—you. We must, of course, acknowledge that the big stations reach us better than the smaller ones; also that their programs are, or can be made, superior to those which emanate from the little fellows, but one doesn't want to let even the biggest fellow tell you what you shall listen to, or what hook-up you shall use to listen in with. If I want a Radiola 28, 29, or 30, because I feel it's the best thing available, I'll buy it. If I want a Remler, I'll get one, and for exactly the same reason —until, of course, the trust enjoins every source of supply. If you are wise, you'll remember the Sherman Anti-Trust Law still exists (tho' weak in the knees, unhappily, like its cousin Volstead) and kick for freedom, ere freedom falls clean out of the atmosphere. *I* want to listen to KFI and not *always* to "experimental station 2 XAR" double-chained to WCR at Washington, (KFI's wave-length), and I love to fly-fish for the little chaps like KMMJ, Clay Centre, Nebraska, even tho' that may be the voice of "Old Trusty" Incubators and I want to angle for these and all the other waifs of the ether when I please, and with such apparatus as gives me the best results—at a reasonable cost! Most other men I know want about the same thing and it is reasonably certain that *you* personally object to the fastening upon this sorely tried body politic of another trust—and an AIR trust at that! You *would* have to be constitutionally inert and inoccuous to willingly consent to such a thing. Put such a Trust over, and the next thing you'll have to swim in Trust bathing suits, paddle in Trust canoes or row in Trust rowboats—or be forbidden the water. Come to think of it, how has this opportunity been missed? If Henry, now, were not hinged the right way, every State in the Union (not controlled by Jewish politicians) would by this time refuse to license anything but Lizzies and Lincolns. The Legislators, naturally, would simply refuse to be seen in Lizzies. Sounds ridiculous, of course, especially to those fellows who drive Chevs, but it's not any more absurd than the thing Radio Corp. (*not* corpse, please) of America proposes to do to us "free Americans". The question before the house is:—

Will you ride or be ridden?

Or, in other words, ARE you really the Patient Ass you are supposed to be? Another year will tell. Anyhow here's a good slogan for fighters—stolen from the gas stations

FREE AIR!

Diagnostic Pointers

EPILEPTIFORM CONVULSIONS

Recognized causes of epileptiform convulsions may be classified as follows:

General cerebral pathology
1. Concussion
2. Encephalitis
3. Idiocy
4. Insolation
5. Lues (interstitial)
6. Multiple sclerosis
7. Myoclonus
8. Paresis

Local cerebral pathology
1. Abscess
2. Arteriosclerosis
3. Hemorrhage
4. Hydrocephalus
5. Meningitis
6. Softening
7. Traumas
8. Tumors

Toxemia
1. Arsenic
2. Carbon Monoxide
3. Diabetes
4. Eclampsia
5. Influenza
6. Rabies
7. Rheumatism
8. Strychnine
9. Syphilis
10. Thyrotoxicosis
11. Uremia

Functional
1. Compulsion neurosis
2. Dementia Precox
3. Hysteria

Endocrine
1. Hypopituitarism
2. Thymus diseases and extirpation
3. Parathyroid diseases and extirpation

Cardiovascular
1. Adams-Stokes syndrome

Border Line
1. Affect epilepsies of Bratz
2. Migraine
3. Narcolepsy
4. Vagal and vasovagal attacks

Experimental
1. Cortical stimulation
2. Decerebration
3. Toxemia

JOHANNES M. NIELSEN, M.D., Battle Creek, Mich. in *M. J. and Rec.* for September 16, 1925.

POTTENGER'S SIGN IN TUBERCULOSIS

Inflammatory changes in the lungs give rise to sensitiveness in the overlying skin.

Draw a fine needle in horizontal lines over the suspected area and mark the points where greatest sensitiveness is noted. Then carefully explore this area by every means.

It is surprising how early this sign is present.—G. Y. OLIVER, in *The Prescriber.*

RAT-BITE FEVER

Rat-bite fever is the name given to a disease caused by the presence in the blood of an organism known as *spirochaete morsus muris,* whose normal habitat is the mouth of the rat. It is characterized by an irregular fever of moderate degree, beginning about 10 days after the bite and continuing for weeks or months (if not properly treated), with malaise, general aching and considerable prostration.

Diagnosis is by the history and the finding of the spirochetes in the blood (by the dark-field or the India-ink method).

Treatment: the arsphenamines.—DR. JOHN ZAHORSKY, of St. Louis.

CELL GROWTH AND FUNCTION

In a cell, the nucleus represents growth and the cytoplasm function. In cancer cells we have nuclei but no differentiated cytoplasm—growth but no function: In the red blood cells we have cytoplasm but no nucleus—function but no growth.—DR. WM. J. MAYO.

OCULO-CARDIAC REFLEX

Take the pulse; make firm pressure on the eyeball and take the pulse while doing so.

If there is no change, the patient is normal in this respect; if the pulse is more rapid, sympatheticotonia is present; if slower, vagotonia.—G. Y. OLIVER, in *The Prescriber.*

MITRAL STENOSIS

In young girls, the earliest symptom of mitral stenosis is sometimes the development of metrorrhagia.—DR. A. SIREDEY, in *La Gynécologie.*

STOOLS OF INFANTS

When a baby's stools are soft and moist, the difficulty is in the motor or reflex mechanism. This is apt to occur in infants who have been allowed to contract the suppository or enema habit. If the stool is too dry or compact, try to change it by diet before giving laxatives.—DR. J. C. GITTINGS, of Philadelphia.

EYE DISEASE AND SYSTEMIC PATHOLOGY

I believe, and I think science will ultimately bear me out, that aside from injuries, local infections and malignancy, eye diseases are symptoms merely and call for localization in some other part of the body. In this category I would place herpetic ulcers, phlyctenular ulcer, iritis, iridocyclitis,

choked disk, glaucoma, scleritis, episcleritis, tubercular and specific lesions and metastatic conditions.—PROF. M. M. CULLOM, of Vanderbilt Univ., in *E. E. N. & T. Monthly.*

SKIN ERUPTIONS FOLLOWING ARSPHENAMINES

Toxic skin eruptions are seen more frequently after the use of sulpharsphenamine than is the case with other preparations.—SUTTON, in *A. J. of Syph.*

OXYGEN SATURATION AND CYANOSIS

Clinical cyanosis appears when capillary oxygen unsaturation has reached a level of 6 volumes percent. This does not hold in the presence of *anemia*, where serious oxygen lack may be present without cyanosis.—DR. C. A. L. BINGER, of New York.

CHEST ASPIRATION

The place to insert the needle in aspirating the chest for suspected empyema is at the *point of maximum dullness.* It is important, especially in children, to secure good local anesthesia, as the needle may have to be used often in doubtful cases.—DR. CARL A. HEDBLOM, of Madison, Wisc.

MUMPS

Marked redness of the orifice of Steno's duct is the earliest objective sign of mumps.—DR. WM. LINTZ, of Brooklyn, N. Y.

TEETH AND HEADACHE

A non-erupted tooth may be the cause of an obstinate headache.—DR. WM. LINTZ, in *Dental Outlook.*

EYELASH SIGN IN COMA

In comatose patients, on touching the eyelashes in functional diseases like hysteria, catatonia and epilepsy there is a winking-like movement of the eyelids—while in organic brain diseases like cerebral hemorrhage, coma following convulsions in paresis and in skull fractures no such winking takes place.—LEMCHEN, in *Ill. M. J.*

SACROILIAC DISPLACEMENT

1.—Have the patient sit upon the edge of a chair with legs extended straight forward. If there is a sacroiliac dislocation or sprain, complaint of pain on the affected side will be made if the body is bent forward, while if the knee on the affected side is flexed there will be no pain.

2.—Apply static sparks or static wave over the sacroiliac joints. Complaint of severe pain will be made if there is a displacement, while none will be caused if the parts are normal.—DR. WM. B. SNOW, in *A. J. of Electrotherap. & Radiol.*

KIDNEY FUNCTION TESTS

In a case of suspected renal insufficiency we must:

1.—Determine the urine concentrating power of the kidneys.

2.—Determine functional excretory power.

3.—Determine whether substances normally excreted by the kidneys are held in the blood.

Methods. 1.—Put the patient on a fixed diet for 3 or 4 days, measuring all food and fluids taken and all urine voided. Morning and evening specimens should be tested for specific gravity. Polyuria and fixed specific gravity are found in chronic nephritis and some other conditions.

2.—Inject, intravenously, 1 Cc. of a solution of phenolsulphonephthalein, containing 6 mg. of the salt. Collect all urine passed during 1 hour and 10 minutes following the injection and determine the percentage of excretion by the colorimeter. A reading of 50 percent or over indicates normal functioning. Readings of 25 to 40 percent must be carefully checked by other tests and interpreted with judgment.

3.—Draw exactly 5 Cc. of blood into a narrow-necked tube containing 2 drops of 30-percent solution of potassium oxalate; mix well and add 2 or 3 drops of toluene; seal the neck of the tube in the flame. This specimen should be sent to the nearest reliable laboratory for estimation of blood urea.—DR. CHARLES FERGUSON, of Spokane, Wash.

SKIN TEST IN SCARLET FEVER

The skin test of Schultz and Charlton, made by injecting scarlatinal antiserum, intradermally, in cases of scarlet fever, and noting a blanching of the rash, occurs regularly in cases of scarlet fever and does not occur in the scarlatiniform eruptions of erysipelas and anaphylaxis.—DRS. LEVIN & PARSONS, in *Am. J. Dis. of Child.*

PERNICIOUS ANEMIA

The diagnosis of pernicious anemia is *relative.* If no *nervous* symptoms are present in the case, the anemia is probably not pernicious.—DR. A. J. OCHSNER, of Chicago.

Current Medical Literature

THE BOROCAINES

The search for an ideal local anesthetic continues, and A. J. Copeland and H. E. F. Notton seem to have made a notable contribution to the subject in their studies of the borocaines, which are reported in the *Brit. M. J.* for September 26, 1925.

By a series of interesting experiments these workers demonstrated that toxic effects and low anesthetic power are due to the prompt absorption of certain drugs into the general system.

The different salts of the various local anesthetics have different effects; and the addition of certain inactive salts to the solutions modifies the effects considerably.

When a salt of cocaine with a weak acid, such as acetic acid, is dissolved in water, it undergoes hydrolytic dissociation, rather than electrolytic dissociation and its surface anesthetic power is enhanced. The *p*H values of such solutions are higher than those where electrolytic dissociation takes place.

Experiments with a number of weak acids, in combination with the various local anesthetics, indicates that boric acid is the most suitable substance for this purpose, and this article deals, at some length, with the pharmacological work which has been carried on with the borocaines, which indicates that these salts provide local anesthetics whose anesthetizing properties are greater and whose toxic properties are less than those of the salts now commonly in use.

MILK INJECTIONS IN GYNECOLOGICAL CASES

In the *N. Y. S. J. of M.* for Dec. 15, 1925, Dr. Reginald M. Rawls, of New York, discusses the results obtained in the treatment of 96 acute, subacute and chronic cases of pelvic inflammation by the intramuscular injection of boiled milk.

In making these injections, great care should be exercised that none of the milk enters the blood stream directly, as this accident is the cause of most of the severe reactions.

Dr. Rawls begins with 5 Cc. of the milk, injected deep in the gluteal muscles, and follows with doses of 10 Cc. every third or fourth day until the desired effect is produced, which requires, usually, about 6 or 8 injections, although as many as 20 have been used in some cases.

Contraindications are: hypersensitiveness to milk protein; alcoholism; pregnancy; various cardiac lesions; and diabetes. Neither extreme youth nor age are generally recognized as contraindications.

In the 96 cases, the results at the end of one month were that 38.5 percent were cured and 54 percent were improved. In 78 cases observed from 4 to 21 months the results were practically identical — 35.5 percent cured and 53.9 percent improved.

The doctor considers milk injections a highly interesting and valuable form of conservative treatment in gynecological cases, especially those of acute salpingitis, pelvic peritonitis and the socalled "frozen" pelvis.

THE SPECIFIC CHARACTER OF CANCER AND ITS TREATMENT WITH LEAD

Dr. W. Blair Bell, of Liverpool, after careful study of the literature and of the various factors involved, has come to the conclusion that malignant neoplasms are the result of a specific *process*, though that does not mean that the *cause* must also necessarily be specific; and he feels that a study of the *nature of cancer* is more important than making a list of the various causes.

The biological processes inherent in all growth are inherently similar. No new *biological* factors enter into the growth of a malignant tumor other than those concerned in producing benign tumors, or even normal growth. "Unhealthy cells" are simply those which are not functioning normally.

Healthy cells do not function abnormally; dead cells do not function at all; it is only cells which are *damaged* by some intrinsic or extrinsic agency which are in danger of malignant degeneration.

Malignant neoplasia is a biological atavism—a reversion to the nourishment-providing proclivities normally possessed in a special degree by the chorionic epithelium and resembling this structure in many respects.

Careful chemical analyses have shown that chorionic villi have a decidedly higher percentage of water and of phosphatides than have other body structures; and that the percentage of these substances in malignant tumors is midway between those found in the chorion and in normal tissues.

Further laboratory experiments have demonstrated that *lead*, even in dilute solutions, exerts a *specific* inhibitory effect upon the *growth* of plants and animals. This is confirmed by the well-known fact that children poisoned by lead are stunted in their growth.

Putting these various facts and hypotheses to the test of clinical experimentation, it has been found that the intravenous administration of solutions of lead produces what appears to be a direct and specific

effect upon malignant growths. This effect has, in some cases, caused the rather prompt death of the patient; but in 50 or more, out of about 200 apparently hopeless cases, it has led to complete, symptomatic recovery.

The details of the method of treatment are not given in Dr. Bell's article, but his form of treatment seems to be worthy of careful consideration.

BISMUTH IN SYPHILIS

Dr. Oscar Levin, of New York, writing in *Am. Med.* for December, 1924, considers the use of bismuth in the treatment of syphilis; reports several illustrative cases; and summarizes the results of his studies and experience as follows:

"To summarize briefly our present knowledge regarding the employment of bismuth in the treatment of syphilis, I would say that it must be accepted as a most valuable adjunct. It has a spirocheticidal action and apparently does not interfere with the natural immunologic powers of the body cells. Although not so spirocheticidal as arsenic, it appears to be more powerful than mercury. Bismuth therapy is of value in removing the clinical manifestations in all stages of the disease and in reducing completely or partially the positive serologic tests. The drug may prove to be of value when arsenic and mercury have failed, and it is particularly valuable in the presence of a contraindication to arsenotherapy. The intramuscular route of injection, which is followed, also affords a means of administering a specific drug when intravenous therapy is inadvisable or impossible.

"The disadvantages or untoward effects are practically negligible and those which are most common may be avoided by the proper general supervision of the patient and the employment of a proper and exact technic.

"In view of these conclusions deduced from the facts gleaned from the literature and from my own experience with the drug, it is within the realm of consistency to recommend bismuth as a valuable adjunct for the treatment of syphilis in all its phases."

DIABETES

Diabetes is a man-made disease, coming on in middle life and found only in civilization. Thoughtlessness of body health, carelessness in health habits, and immoderation in diet are contributory factors. The disease is largely due to:

1.—Overeating and improper eating.
2.—Obesity.
3.—Lack of proper elimination.
4.—Sedentary habits.

Chicago's Health.

MILK INJECTIONS IN EYE DISEASES

In the *E. E. N. & T. Monthly* for August, 1925, Dr. Ira E. Gaston, of Portland, Oregon, discusses the use of foreign proteins in eye diseases. He calls attention to the fact that a large amount of clinical and experimental work has been done in an effort to determine the true status of nonspecific protein therapy, and that sufficient good results have been obtained to warrant the statement that the systemic reaction produced by injections of nonspecific proteins has considerable therapeutic value in the treatment of certain inflammatory ocular diseases.

Numerous observations have shown that, in order to be effective therapeutically, the protein agent must be capable of producing a considerable general systemic reaction. This reaction is usually manifested by slight chill, rise of temperature of two to three degrees, sweating, nausea, nervous irritability, and leucocytosis. Sterilized whole milk and antidiphtheritic serum have proved to be most effective in eliciting this systemic reaction.

Nonspecific protein therapy has been most effective in the treatment of acute and subacute inflammatory and suppurative conditions of the anterior segment of the eyeball, and in gonococcic infections of the conjunctiva.

Milk injections may produce serious results in cases of status lymphaticus and severe asthenia. Antidiphtheritic serum is usually not well borne by persons sensitive to horse serum.

BORAX AND BROMIDE IN EPILEPSY

Philip Figdor, M.B., of the London (Eng.) Temperance Hospital, objects to the use of luminal in epilepsy, because it frequently gives rise to toxic symptoms and generally loses its effect if it must be given for long periods.

In the *Lancet*, for Oct. 17, 1925, Figdor outlines his treatment of these cases, as follows:

"In my own experience, sodium biborate (borax) is the most valuable therapeutic agent we have for epilepsy if it is properly applied. Since 1920 I have been using it as a routine treatment in every variety of epilepsy, in nearly 100 cases, and even where it does not absolutely cure it greatly reduces the number of attacks. The great objection is that children do not as a rule respond so well as adults. Its whole value lies in the method in which it is given. I start the patient (if an adult) on sodium biborate, grs. 10, thrice daily, with 10 or 15 grs. of sodium bromide. Sometimes I add 2 or 3 minims of liquor arsenicalis, but I am doubtful of the necessity of arsenic. The main combination is bromide and biborate. If the patient does well on this, I leave it. If the fits do not cease in a fortnight (the standard I adopt during treatment is total cessation of fits, not mere diminution in number, except in pyknolepsy), I first of all increase the sodium biborate to 15 grs. thrice daily. If the fits do not cease totally in another fortnight with this I next increase the bromide to 15 grs.—i.e., 15 grs. each of sodium biborate and sodium bromide. I leave it at that for a month or six weeks, and if there are still fits I give them 15 minims of belladonna once daily, either morning or evening,

depending on whether the fits are diurnal or nocturnal, in addition to the 15 grs. each of bromide and biborate three times a day.

"This combination almost invariably, in my experience, achieves a cessation of fits in adults. Once I get to the optimum drug combination I leave the patient on that for about two months if belladonna has been used, then I diminish the belladonna first, so that after a further month the patient is not taking belladonna. The biborate and bromide I leave undisturbed for at least a year; then, if there are still no fits I gradually diminish the bromide, taking some months until the bromide has disappeared altogether. The patient then remains on what is his optimum dose of biborate (10 or 15 grs), and is kept for another year, even without fits, on sodium biborate and water."

LATE SEQUELÆ OF EPIDEMIC ENCEPHALITIS

Since 1918, when epidemic encephalitis was first reported in this country, we have been slowly learning the seriousness and frequency of its late sequelæ, which may come on months or years after an attack whose acute stage was so mild as to pass undiagnosed.

In the *M. J. & Rec.* for Sept. 16, 1925, Dr. Chas. S. Potts, of Philadelphia, calls attention to the medicolegal and sociological problems which may arise in these cases, due to the more or less profound changes in temperament and mentality which sometimes follow this disease, either when undiagnosed or several years after an apparent cure.

The physical and mental symptoms of these postencephalitic cases may simulate those of other nervous diseases, notably syphilis, neurasthenia and hysteria, and sudden changes in personality and behavior, especially in children, should arouse a suspicion of the possibility of this condition.

HEADACHES

Many may have wondered, at times, why headache is such a common affliction. Dr. E. D. Allgaier, of Cincinnati, Ohio, feels that the reason is because they may be caused by a wide variety of pathological conditions. In the *Int. J. of M. & S.* for July, 1925, he sketches a typical case of chronic headache in which the woman, having been referred by her family physician, to an oculist, a gynecologist, a general surgeon and a dentist, finally returns to her physician in despair, without her appendix, gall-bladder, one ovary, tonsils, adenoids, turbinates and teeth, but with the same old headache.

Dr. Allgaier divides headaches into three classes: *first*, those due to direct irritation of the fifth cranial nerve—inflammation of the nasal sinuses, middle ear or meninges, nasal deformities, brain tumors, etc.; *second*, those due to toxins circulating in the blood, the result of chronic disease of the kidneys, heart, digestive organs and endocrine glands, as well as the general constitutional diseases, like syphilis, anemia and arteriosclerosis; and, *third*, those due to reflex action (which he feels are very rare), the result, generally, of eye-strain.

The point is strongly emphasized that, before undertaking the treatment of a patient with chronic headache, a *most exhaustive* physical examination (including all laboratory tests which might possibly shed light on the case) be made in order to discover, in the first instance, *all* of the factors which may be operating to produce the condition, in order that they may all be removed or corrected.

Attention is also called to the necessity of making *repeated* examinations because, in this way, many obscure points are frequently cleared up.

The doctor suggests the following points in diagnosing headache cases:

1.—Get a good personal history.

2.—Examine the patient from head to foot, and get all laboratory tests made.

3.—Let various specialists examine the patient, and then let all the doctors get together and discuss the case.

Often the family physician can give the specialist some points in the previous history that will greatly aid him. Sometimes a re-examination by some of the specialists is a good idea.

Lastly, in these headache cases, take your time in making a diagnosis, and also give a *guarded* prognosis. In spite of all this trouble and discouragement, we are often rewarded with a cure, and there is no patient more grateful and none that sends you more cases than a cured sufferer from chronic headache.

DYSMENORRHEA AND THE THYROID

Surgeons and gynecologists have long realized that the surgical treatment of dysmenorrhea is almost always very unsatisfactory.

The old family doctor, who often watches the development of a child from birth, through adolescence to maturity, knows that dysmenorrhea is very frequently relieved by pregnancy.

In the light of our modern knowledge of the physiology of the ductless glands, it seems perfectly obvious that pregnancy produces a profounder effect on the endocrines then it does on the pelvic organs, and that the thyroid is, probably, more intimately connected with the reproductive functions than are any of the others.

With these facts as a basis, Dr. Arthur E. Hertzler, of Halstead, Kans., has written a thesis, which is published in the *A. J. of Obst. and Gyn.* for June, 1925, in which he connects dysmenorrhea quite directly with a disorder of the interstitial cells of the thyroid. He thinks that many of these patients have groin pains, which are diagnosed as appendicitis and operated upon without any benefit.

These patients are carefully examined and all contributing factors are eliminated. They are assured that they can be cured by medical means, because the thyroid, and not the pelvic organs, is at fault. If the

patient is nervous, she is given hyoscine and bromides until the nervousness is relieved and then potassium iodide, in one or two grain doses, is administered three times a day until the weight improves and the pulse rate falls to 80; after that the iodide is continued, once a day, until the thyroid becomes normal.

In young patients, whose sexual organs are underdeveloped, anterior lobe of pituitary gland, five or ten grains per day, is often helpful.

This treatment will not cure every case of dysmenorrhea, but it will vastly relieve many cases and a cure can usually be effected in from six to eighteen months.

SODIUM SALICYLATE INJECTIONS IN VARICOSE VEINS

The patient's susceptibility to this agent is first tested by injecting into the vein, 1 Cc. of a 20-percent solution.

In the absence of reaction, a stronger solution, not over 40 percent, is used the following day.

Several sections may be injected at one time, but the total administration of sodium salicylate should not exceed 3 gm.

A constricting band is not essential. Inflamed veins should not be injected. If no cure follows, the treatment may be repeated.

This method is not claimed to be superior to operation, nor does it offer less chance of recurrence.

However, without in the least incapacitating the patient, this treatment strengthens the lower extremities by improving the Circulation.—J. Dunbar, M.B. in *Brit. M. J.* for Jan. 3, 1925.

RICKETS IN INFANTS, TREATED WITH IRRADIATED MILK

As reported by Dr. Benjamin Kramer, of Baltimore, in *Am. J. Dis. Child.* for August, 1925, eight children, from 5 to 39 months old, suffering from active, and in most instances severe, rickets, were fed upon a diet of irradiated milk, orange juice and a cereal, with complete healing in every case, as shown by the clinical and x-ray findings.

The quantity of milk required for 24 hours was poured into a large, shallow dish and irradiated at a distance of 2 feet for not more than 2 hours. (The author is now convinced that 10 to 20 minutes irradiation of the milk would produce the same results.)

The chemical changes in the blood were identical with those produced by feeding cod-liver oil to rickety children or exposing them to ultraviolet rays or sunlight.

CONSERVATIVE TREATMENT OF UTERINE DISORDERS

Some women who suffer from endometritis or metritis, salpingitis or other chronic inflammatory conditions of the uterus or adnexa, in whom curettage would ordinarily be indicated, are unable or unwilling, for economic reasons, to spend the time or the money necessary for this operation.

In cases of this sort, Dr. Perry, in the *Journal-Lancet* for May, 1925, recommends the use of a "rag-baby"—by which he means an intrauterine gauze pack—and states that this procedure produces very satisfactory results in cleaning up and toning up sluggish and inflamed pelvic organs. The maneuver may be performed in the doctor's office and the patient need not lose a day from her duties.

The cervix is exposed with a speculum and the canal carefully dilated. With an ordinary uterine packer, a gauze strip, ½ inch wide, with selvaged edge, plain or medicated with iodine, silver preparations, metaphen, ichthyol, neutral acriflavine, balsam of Peru, chlorazene, or any other substance which seems to be indicated, is introduced into the uterus so as to exert the amount of pressure required by the case. This packing is to remain for 24 or 36 hours—never over 48 hours—and may be removed by the physician, nurse or by the instructed patient, and its removal followed by a cleansing douche. These treatments are repeated *p.r.n.*

PLANTAR WARTS

Warts occurring on the sole of the foot cause considerable discomfort and sometimes entire disablement.

Dr. J. Markey, Medical Corps, U. S. Navy, discusses this condition in the August number of the *U. S. Naval Med. Bul.* and gives the following suggestions as to diagnosis:

"Upon palpation, an area of the covering horny layer of the sole is found to be harder and smoother than the surrounding skin. Usually a pea- to filbert-sized nodosity can be felt under the thickened epidermis, which is movable upon the surface of the metatarsals."

After experimenting with various forms of treatment which have been recommended, he has settled upon one which gives highly satisfactory results and which is carried out in this manner:

"The foot was thoroughly cleansed with green soap and water. The area of the ball of the foot surrounding the nodosity was painted with collodion (to protect the normal epidermis from the continued action of drugs). The thickened epidermis was cauterized with fuming nitric acid or a strong solution of caustic potash. When a hole which approached the diameter of the callosity had been eaten away to a depth at which the patient first complained of pain, it was filled with a 15 to 20 percent salicylic acid ointment. A felt corn plaster of nearly 3 inches diameter having an aperture of half an inch was then taped over the treated area. An additional reservoir of ointment was placed in the opening of the plaster if the foot was to receive only one dressing a day. Each morning the entire dressing was removed. The loose detritus and dead tissue were gently scraped away and the ointment applied as before.

"The ordinary case will require only six or seven applications of this type, whereas in obstinate cases the treatment may have to be continued for a fortnight or longer. The lesions are prone to recur if treatment is not persisted in until the last vestige of the papilloma is removed."

TOBACCOPHOBIA

In an interesting and delightfully satirical article in the *Therap. Gaz.* for August, 1925, Dr. O. Victor Limerick, of New York, proceeds to show that the widespread prejudice against tobacco, on the ground that it causes physical, mental and moral deterioration, which exists in the minds of many people who should know better, is based upon a misguided and uninformed public opinion rather than upon scientific evidence.

He calls attention to the fact that, in the act of "inhaling" tobacco smoke, none of it gets below the larynx, and that the purpose of this inhalation is to permit a better appreciation of the smoke's aroma by the olfactory organs.

That the pleasure derived from smoking is largely visual—shown by the fact that few care to smoke in the dark—and tactile, like that produced by hugging and kissing, rather than the sort of satisfaction which is craved by a drug addict, is proved by the fact that habitues of opium and coca always prefer the potent alkaloids—morphine and cocaine—to the crude drugs, while no one ever heard of a man with the "nicotine habit", although this drug is readily obtainable.

There is no absolutely sound *scientific evidence* to prove that tobacco, used in reasonable moderation by a normal man, produces any noxious influences whatever; while there is much "clinical" and presumptive evidence to the effect that, under certain circumstances, it may serve a useful purpose in soothing the jars and frets of life and ameliorating its periods of gloom and depression.

BODY WEIGHT IN HEALTH AND DISEASE

A patient's weight is one of the physical signs which can be most easily and readily measured and can frequently give us useful and important diagnostic and prognostic suggestions. Dr. Ernest S. duBray, of San Francisco, discusses this subject at some length in the *Am. J. M. Sc.*, for October, 1925.

He considers overweight from the physiological and endocrine standpoint and its relation to diabetes and cardiovascular diseases, and has something to say regarding the surgical and orthopedic aspects of obesity. Considerable space is devoted to the relation of under- and overweight to longevity.

Dr. duBray's conclusions are as follows:

"From what has been said, I have hoped to emphasize the fact that body weight is a simple measurement of extreme importance in clinical medicine. An individual who presents a marked variation in body weight should demand a rational explanation for this alteration. Our patients should be aware of this fact and unexplained variations in their weight should incite their curiosity sufficiently to urge them to seek medical advice. Abrupt gain or loss may be explained in certain instances on a physiological basis, but it is more likely to be associated with disease.

"The tendency to excessive gain in weight is best controlled in its incipiency. In the majority of adults obesity is of the exogenous type and can be adequately controlled by broad hygienic measures, in which restriction in diet affords only one part of the therapeutic régime. Exceptional instances of the true constitutional type of obesity, recently studied by Strouse, do exist. They represent a true metabolic anomaly which is not entirely understood. Clear-cut examples of endocrine obesity are common before the adult age and are believed to be primarily dependent on the disturbance of function of three ductless glands; namely, the thyroid, gonads, and the pituitary, either singly or combined. The endocrines *per se* play a less important part in the obesity occurring in adults.

"Aside from the esthetic reasons and the constant inconvenience of marked overweight, this condition should be studiously guarded against, because of the fact that it is found to predispose to diabetes, degenerative cardiovascular diseases, arthritis and static difficulties associated with faulty bodily mechanics.

"Surgery in the obese is facilitated and the mortality reduced if an internist cooperates in the preoperative and postoperative management of these cases.

"Loss of body weight and undernutrition have likewise many inportant medical aspects. Reduction of physical and mental vigor, increased sensibility to cold, depression of the hormonal system, lowering of the metabolic rate, and increased susceptibility to infection are among the most significant results of undernutrition.

"Life insurance statistics indicate that those who weigh between 10 and 20 percent below average show the optimum condition for longevity at most ages beyond early adult life."

New Books

INDEX OF TREATMENT

AN INDEX OF TREATMENT BY VARIOUS WRITERS. *Edited by Robert Hutchison, M. D., F.R.C.P. and James Sherren, C.B.E., F.R.C.S. Ninth Edition, Revised and Enlarged. New York: William Wood & Company,* 1925. *Price* $12.00.

This work is intended to provide the practitioner with a complete guide to treatment, within a moderate compass and in a form convenient for reference. It seems to accomplish its purpose well.

There is a place in the library of all physicians for the brief medical formulary, but it should not be used too much. There is a place, also, for the complete and exhaustive textbooks on therapeutics, which are, as a rule, not used enough. This volume occupies a strategic position between the two, and can be used, with great profit, every day, by almost every member of the profession.

No attempt has been made to deal with complicated surgical procedures, but, on the contrary, nonoperative treatment is given prominence. All consideration of obstetrical treatment is omitted. There are no discussions of the relative merits of different methods of treatment, but each contributor has set forth the procedures which he considers simplest and most effective.

The matter is arranged alphabetically, with subject heads in bold-faced type to catch the eye readily, and cross-references abound. In addition, there is a supplementary index of 27 pages, set in three columns. Paper and type are good. The 1005 pages of text are practically solid reading, as the illustrations are few.

In this (the ninth) edition, new articles have been added (Infective Endocarditis, Spinal Analgesia, etc.) and many others, such as those on Asthma, Diabetes, Fractures and Syphilis, have been brought up to date. Physical methods of treatment are more fully considered.

We scarcely see how any practitioner can afford to be without this book, as it gives an enormous amount of practical information which is needed for daily reference.

OSLER & McCRAE: MODERN MEDICINE

MODERN MEDICINE. Its Theory and Practice. In Original Contributions by American and Foreign Authors. *Edited by Sir William Osler, Bart., M.D., F.R.S. Third Edition, Thoroughly Revised. Re-edited by Thomas McCrae, M.D. Assisted by Elmer H. Funk, M.D. Vol. I. Illustrated. Philadelphia: Lea & Febiger.* 1925. *Price* $9.00.

It is rare that so monumental a work as Osler's System of Modern Medicine goes to a third edition, and the demand for this system which has arisen in the twelve years which have elapsed since the appearance of the first volume of the second edition is the most eloquent testimony to its great interest and value.

A system fills an unique place between the brevity of treatment required by a textbook and the exhaustive and detailed consideration which characterizes a monograph, and this feature is frequently emphasized in the present work.

This first volume deals with the Bacterial Diseases and the Nonbacterial Fungus infections—the Mycoses. Such conditions as botulism and epidemic encephalitis, which have come into prominence since the appearance of the second edition, are here considered, as well as the newer work upon scarlet fever, bronchial asthma, tuberculosis and other conditions.

Osler always emphasized the importance of keeping the general practitioner in mind in the preparation of articles, and this System bids fair to be a fitting memorial to his traditions and his greatness.

BEAUMONT & DODDS: ADVANCES IN MEDICINE

RECENT ADVANCES IN MEDICINE. Clinical, Laboratory, Therapeutic. *By G. E. Beaumont, M. A., D. M., F.R.C.P., D.P.H. and E. C. Dodds, Ph. D., M. B., B. S., B. Sc. Second Edition. Illustrated. Philadelphia: P. Blackston's Son & Co.* 1925. *Price* $3.50.

Within the past few years, many new methods in the diagnosis and study of altered physiological processes in the human body have been worked out, but unless a man has had the opportunity to take postgraduate work or has been regularly reading the journals which report the technic of new laboratory and chemical methods for exact study he needs a reference book which will put him in touch with this newer work. This is that sort of book.

All reference to therapeutics has been carefully avoided, as well as discussions of matters which pertain to biochemistry and bacteriology.

The chapters deal with blood analysis, renal function tests, glycosuria and diabetes, hepatic function, the stomach, basal metabolism, endocrine disorders, the heart, artificial pneumothorax, skin tests and the Schick and Dick reactions, the diagnosis of typhoid and the study of the cerebrospinal fluid.

So much material of a practical sort, which can only be found scattered through many volumes of the technical journals, is gathered together in this volume that it appears to be indispensable to laboratory workers and to those who are planning to

take medical examinations of any kind; and there is scarcely a physician who can not read it through, at least once, with vast profit and who does not need it as a reference work in his library.

WILLIAMS: MIDDLE AND OLD AGE

MIDDLE AGE AND OLD AGE. *By Leonard Williams, M.D. London: Humphrey Milford (Oxford University Press).* 1925. *Price* $3.25.

This is partly a treatise on geriatrics (and, as such, welcome, as there are too few of them), but mostly a warning and a guide to those who are now in process of dying by their own hands and a discussion of how to grow old usefully and beautifully.

The author, recognizing that most of those who attain adult life and who then encounter senility or death before the age of 70, 80 or more years are suffering from the effects of their own misguided and disastrous mode of life, has endeavored to so instruct them (or help us to instruct them) in the proper care of their minds and bodies that they may be able to maintain themselves for a long period upon that plateau of life, between maturity and old age, where most of the notable and significant work of the world is accomplished.

FRANKE: OCULAR THERAPEUTICS

OCULAR THERAPEUTICS. A Manual for the Student and the Practitioner. *By Dr. Ernest Franke. Translated by Clarence Loeb, A.M., M.D. St. Louis: The C. V. Mosby Co.* 1925. *Price* $3.50.

Few translations are thoroughly satisfactory as textbooks for the average physician, and this is no exception to the rule. The discussions show the European viewpoint very strongly; the lists of drugs recommended abound in the names of German medicaments, many of which are little used in this country; and the style is not especially clear.

The fact is emphasized that many cases of eye disease are due to various general systemic conditions which must be corrected before the eyes will clear up.

The book can not be recommended to a very wide circle of readers.

WOOD: FUNDAMENTAL HUMAN TYPES

THE SEVEN RAYS. *By Ernest Wood. Chicago: The Theosophical Press,* 826 *Oakdale Ave.* 1925. *Price* $1.75.

This little book contains much very interesting material of a fundamental and rather unusual character, bearing upon the seven basic types of human beings and the functions in life which they are best qualified to fill.

The author defines life as being the actions and reactions between the world of being, the world of consciousness and ourselves. No man can say "I am not", nor can he say "I am unconscious", and at the last, he must rest his knowledge of his self-existence upon the outer world of being.

The first general division is into three groups: those whose chief interest is in *being*, or the development of the powers within; those who are mostly concerned with the world of matter and the *consciousness* by which we recognize its varieties and powers; and those whose work is to harmonize the two—to deal with *life itself*.

In the first division he puts three classes: the man of will, the man of love, and the man of thought. In the last division, also three, in reverse order: the man of thought, the man of love, and the man of will.

Arranged in order the seven types are as follows:

1.—He who seeks freedom through mastery of himself; the ruler.

2.—He who seeks unity through sympathy; the philanthropist and teacher.

3.—He who seeks knowledge through the study of life; the philospher.

4.—He who seeks harmony; the man of imagination.

5.—He who seeks truth in the world of things; the scientist.

6.—He who seeks goodness in the world; the devotee.

7.—He who seeks beauty in the world of things; the artist and craftsman.

Upon such a classification as a basis the author works out a very practical thesis as to the type of work best suited to the powers and faculties of men of the various classes.

The book is not especially easy reading, because it requires concentrated attention to grasp its large significances, and because a number of Indian words are used to express briefly certain meanings which would require several words or a whole sentence to set forth in English.

In all technical studies however (of which this is one) we expect to learn the nomenclature of the subject, and this treatise will well repay the efforts and study of those who have a taste for the practical side of metaphysics.

LANDIS: PHYSICIAN AND PEOPLE

THE PHYSICIAN AND THE PEOPLE. *By Leonard L. Landis, M.D. New York: American Association of Independent Physicians.* 1924. *Price* $3.00.

The author announces on the title page that he was "formerly" connected with various hospitals in New York; is an "ex-member" of the County Medical Society; and at present holds the positions of examining physician of the Order of Pythias and Ladies of the Golden Star, and Chief examiner of the Order of Independent Sons.

In the double introduction, he demonstrates the appropriateness of his connection with the "Independent Sons" by declaring his emancipation from the "traditional and hypocritical" tenets of medical ethics, and calls upon physicians in general to give up this "decaying dogma" and become martyrs to medical independence.

The doctor goes rather fully into his personal history to explain how he arrived at

the conclusion that the proper way to increase his practice was by newspaper advertising and the mailing to prospective patients of printed circulars describing his attainments and methods. He says the plan worked.

In his suggestion of the "West Point System" in medical education, whereby the student is required to live steadily at the college or hospital during his four years' training, learning the practical as well as the theoretical side of the handling of the sick, from the ground up, there may be some merit; There is perhaps something to be said, also, in favor of his idea of charging a flat rate, *per illness*, rather than per visit.

On the whole, if you are a medical maverick and feel that the "millstone" of medical ethics cramps your style and that the thing to do is to secure a large income at any cost, this is a book which will repay your careful study.

VARLEY: RADIUM

RADIUM, ITS THERAPEUTIC USES IN GENERAL PRACTICE. *By G. H. Varley, M. D. London: Humphrey Milford (Oxford University Press.)* 1924. *Price* $1.75.

The practitioner is frequently at a loss to know just what classes of cases are likely to be benefited by the use of radium and what results may be confidently expected. This little book was written to give just this information.

The first part deals briefly with the physics of radium and the methods and technic of its application.

The second part considers the therapeutics of radium in malignant and nonmalignant conditions, going into the indications for its use and the precautions to be exercised. Records of actual cases are used to bring out special and general points.

Brief, simple and practical details which every physician ought to know about radium.

COPE: ACUTE ABDOMEN

THE EARLY DIAGNOSIS OF THE ACUTE ABDOMEN. *By Zachary Cope, B.A., M.D., M.S., F.R.C.S. Third Edition. London: Humphrey Milford (Oxford University Press).* 1925. *Price* $3.80.

When acute abdominal symptoms present themselves, it is extremely important to be able to recognize what organ or organs are affected and what is the nature of the pathological process. The author of this volume offers us much assistance in this matter in a compact and readily available form.

After discussing the general principles and methods of abdominal diagnosis, he takes up, in detail, the various conditions which may give rise to acute symptoms and distinguishes especially between those which are most likely to be confounded with one another. Chapters deal with appendicitis, intussusception, strangulated hernia, ectopic gestation, and a number of other subjects.

Dr. Cope stresses the points that, in *every case* of acute abdominal symptoms, the physician should make a serious and thorough attempt at accurate diagnosis; that most cases of severe abdominal pain, occurring in people who were previously well and lasting over six hours, require surgical treatment; and that many examinations of the abdomen are imperfect because the examiner does not apply his knowledge of anatomy.

The book is of convenient size and well gotten up and the material is so arranged as to produce the maximum impression with the minimum expenditure of time and effort on the part of the reader. Tables and excellent anatomical diagrams are used wherever they will serve to illuminate the text.

The study of books like this should greatly increase the value of any physician's services to his patients.

PETTIBONE: PHYSIOLOGICAL CHEMISTRY

AN INTERMEDIATE TEXTBOOK OF PHYSIOLOGICAL CHEMISTRY WITH EXPERIMENTS. *By C. J. V. Pettibone, Ph. D. Third Edition. 404 pages. St. Louis: The C. V. Mosby Company.* 1925. *Price,* $3.25.

This book is intended for use as a text for students. It is apparently of about the right length for the purposes of elementary instruction in the subject, which, necessarily, sharply limits the amount of information that may be presented in the treatise, and makes it too incomplete for extensive use as a reference book, for which, of course, it is not intended.

This edition has been brought up to date by the author, in line with the recent advances in this branch of the science. The latter portion of the book is a laboratory manual for the regular college course of instruction, and this phase is well covered and particularly valuable.

E. H. V.

BUCHANAN: MIDWIFERY MECHANICS

MIDWIFERY MECHANICS. *By Lieut.-Colonel Andrew Buchanan, I.M.S. London: Humphrey Milford (Oxford University Press).* 1924. *Price* $2.50.

In obstetrical practice, we have to deal with three factors; the passenger, the power and the passage. The power is a matter of physiology; the passenger and the passage involve anatomical considerations; but the relations between these last two factors, during the progress of labor, are matters of pure mechanics.

With an unusually clear perception of this last fact, the author of this admirable little work has set about demonstrating his thesis by means of two-dimensional models and geometrical diagrams and has succeeded in making the processes of labor remarkably clear. Comparisons are made among all the various positions and presentations, and it is graphically shown why some combinations render labor easy while others make it difficult. The maneuvers necessary to con-

vert a difficult situation into an easy one become immediately obvious. We have long felt that no man who lacks a vivid imagination will ever be able to practice high-class obstetrics, for something more than brute strength is needed in assisting at a difficult birth. This book makes it surprisingly easy to visualize what is taking place within the mother's belly during labor.

If we could persuade every man who practices obstetrics at all to buy this book and thoroughly master its contents at once (if he has to sit up nights to do it) and then carry it in his obstetrical bag constantly we should feel that we had done a large service to the profession and to the country at large.

RUBIN: MYSTERIOUS GLANDS

THE MYSTERIOUS GLANDS. How Your Glands Control Your Mental and Physical Development and Moral Welfare. *By Herman H. Rubin, M.D. Philadelphia: Milo Publishing Co.* 1925.

This purports to be a popular treatise on the endocrine glands, but, upon closer reading, seems to be a rather elaborate advertisement of the work of its author, with the idea of attracting patients.

In the latter part of the introduction, he invites his readers to write to him for further information and for suggestions as to the management of their cases.

His remarkable treatment seems to be carried on by means of an instrument which he calls an "Endocrinator," which is supposed to stimulate all the ductless glands by means of "balanced radiations." Of course, no details of his methods are given.

Rubin enunciates as facts many matters which are still open to question, to say the least, and this book promises to be of value chiefly to its author, who was, as many will remember (see *J.A.M.A.* for March 1, 1924, p. 735) the "Medical Director" of the company which exploited the notorious "Citrophan" mail-order obesity treatment, a few years ago.

ROUT: EXERCISE FOR WOMEN

SEX AND EXERCISE: A Study of the Sex Functions in Women and Its Relation to Exercise. *By Ettie A. Rout (Mrs. F. A. Hornibrook). Foreword by A. C. Haddon, M.A., Sc.D., F.R.S. New York: William Wood and Company.* 1925. *Price* $2.25.

The average civilized and prudish person looks upon the native dances of savage or barbarous peoples as manifestations of innate indecency. Those, however, who have really given the subject study realize that these dances are the highest, and frequently the only method of expression of the emotional life of such people and are also a highly concentrated and very efficient form of physical exercises.

The author of this interesting and valuable little book has given us one of the sanest and most valuable studies of aboriginal dancing which we have seen anywhere, showing how these dances are calculated to regulate all the bodily functions and especially to overcome constipation and increase ability for satisfactory sexual intercourse.

The discussion, which might seem to be somewhat academic, is rendered highly practical by the outlining—with illustrations—of a series of exercises based upon these dances which, if faithfully carried out, should result in a vast increase in the efficiency of the women who practice them.

Any physician can read this book with great enjoyment and can loan or give it to many of his women patients with much profit to all concerned.

COOPER: HISTOLOGY OF ENDOCRINE ORGANS

THE HISTOLOGY OF THE MORE IMPORTANT HUMAN ENDOCRINE ORGANS AT VARIOUS AGES. *By Eugenia R. A. Cooper, M.D. London: Oxford University Press.* 1925. *Price* $4.00.

ST. ANDREWS INSTITUTE

REPORTS OF THE ST. ANDREWS INSTITUTE FOR CLINICAL RESEARCH. St. Andrews, Fife. Vol. II. *London: Oxford University Press.* 1924. *Price* $3.00.

ROLLESTON: ON WRITING THESES

ON WRITING THESES FOR M.B. AND M.D. DEGREES. *By Sir Humphrey Rolleston, Bart. K.C.B. London: John Bale, Sons & Danielsson, Ltd. 83 Great Titchfield St., W. 1.* 1925. *Price, 1 shilling.*

HAYFEVER

PLANTS WHICH CAUSE HAYFEVER. (*Pamphlet*) *Published by The Arlington Chemical Company, Yonkers, N. Y.*

PULAY: ECZEMA AND URTICARIA

EKZEM UND URTIKARIT; KLINIK, PATHOGENESE UND THERAPIE. *Von Dr. Erwin Pulay, Wien. Berlin. Urban & Schwarzenberg,* 1925.

BRUGSCH: GESAMTE MEDIZIN

ERGEBNISSE DER GESAMTEN MEDIZIN. Unter Mitwirkung hervorragender Fachgelehrten. *Herausgegeben von Prof. Dr. Th. Brugsch. Siebenter Band.* (4 *parts*) *Berlin und Wien: Urban & Schwarzenberg.* 1925.

Medical News

EUROPEAN TRIP FOR PHYSICIANS

A special European tour has been organized for the Travel Study Club of American Physicians, to occupy the period between June 12 and August 8, 1926. This will be a splendid opportunity to visit various famous clinics, hospitals and other places of interest.

For full particulars write to Raymond and Whitcomb Co., 225 Fifth Ave., New York City.

YELLOW FEVER

The incidence of yellow fever has at no time in its recorded history been so low as at present. During the past year no ships entering the United States were quarantined for this disease.

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CHICAGO FIGHTS BAD MILK

Dr. Herman Bundesen, Health Commissioner of Chicago, is waging a fight to have the State or Government purchase all cattle that are tuberculous and thus insure a pure milk supply for Chicago. He claims that other States have outlawed diseased cows, which Illinois farmers have purchased and from which they are selling milk to Chicagoans. An injunction has been granted against Bundesen, restraining him from enforcing Chicago's milk regulations but he is appealing to many organizations to help him and is receiving good support.

Our photograph shows Dr. Bundesen in his laboratory, personally checking laboratory tests of milk for living tubercle bacilli, by autopsy of a Guinea pig which received an injection of milk six weeks ago.

CIVIL SERVICE EXAMINATIONS

Applications for competitive examinations for the position of Occupational Therapy Aide and Pupil Aide, and Dietitian will be received by the Civil Service Commission up to June 30, 1926.

Salaries range from $1,140 to $2,500 per year.

Full information and blanks may be obtained from the U. S. Civil Service Commission, Washington, D. C.

DEATH OF DR. EYCLESHYMER

Dr. Albert Chauncey Eycleshymer, of Chicago, formerly dean of the Postgraduate College of Medicine of the University of Illinois, member of the National Board of Medical Examiners, and well-known authority on anatomy and embryology, died at his home Dec. 30, 1925, as a result of the accidental discharge of a rifle he was cleaning.

A PHONOGRAPHIC CLINIC

Engineers of the Bell Telephone Laboratories and the Columbia Phonograph Company, with the cooperation and assistance of Dr. Richard C. Cabot, of Harvard University Medical School, are preparing a series of records of abnormal heart sounds, with comments by Professor Cabot, which will make available to those who are far from the great medical centers a course of postgraduate study in this most important

subject such as has never, heretofore, been available, even to those who had the best opportunities for attending clinics.

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DR. AND MRS. WILFRED T. GRENFELL

Dr. Grenfell is known all over the world as the man who has spent his life in bringing the benefits of medical science to the fishermen and their families who live in the remote and lonely districts of Labrador and Northern Newfoundland.

The doctor and his wife have recently been conducting a sale of articles made in Labrador, the proceeds of which will go toward the establishing of more hospitals in those distant regions which, otherwise, would be wholly without such service.

AMBULANCE CALLS IN NEW YORK

The united hospitals of New York City answered an ambulance call on the average of every twelve minutes during the year of 1924. The total number of calls, for the year, amounted to 40,000. Nearly 1,000,000 patients were cared for—and a new patient was admitted to the hospitals every thirty seconds.

SMALL-POX

During the past year the incidence of small-pox in the United States increased 75 percent and the death rate 62.8 percent. Our death rate from this disease is now the highest of any civilized country in the world.

[This shocking condition is largely due to the indifference and lethargy of the medical profession in combating the propaganda of the antivaccinationists and their failure to keep the people aroused to their danger.—ED.]

PSYCHIATRIST IN WELFARE WORK

The welfare societies of Boston, Mass., have engaged Dr. Elizabeth A. Sullivan, who is a graduate of Tufts College Medical School and has done postgraduate work at the Harvard Medical School, to deal with the psychic factors in cases of estranged parents, unruly children and other family difficulties. This is an innovation which should have large results.

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HEADS NATIONAL TUBERCULOSIS ASSOCIATION

Dr. George M. Kober, dean of the School of Medicine of Georgetown University, was elected President of the National Tuberculosis Association at the annual meeting of the Association in Washington, in December. The Association makes research studies in tuberculosis with the funds derived from the sale of Christmas seals.

Send for This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceutical, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use the numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

Z- 30 Helping the Cell to Help Itself. 32-page booklet. The Alkalol Co.

Z- 41 Specific Urethritis. Riedel & Co., Inc.

Z- 63 Arsenauro and Mercauro. 100-page booklet. Parmele Pharmacal Co.

Z- 84 Storm Binder and Abdominal Supporter. 4-page folder. Dr. Katherine L. Storm.

Z- 92 New Light on an Old Remedy. 12-page booklet. Century National Chemical Co.

Z-222 Rabies Vaccine. 24-page booklet. Parke, Davis & Co.

Z-236 The Glycerophosphates. 8-page folder. Smith, Kline & French Co.

Z-238 Ethical Medicinal Specialties. 8-page booklet. A. H. Robins Co.

Z-242 The Endermic Treatment of Febrile Conditions. 24-page booklet. Pneumo-Phthysine Chemical Co.

Z-243 Useful Information for the Practitioner. 24-page booklet. Chas. H. Phillips Chemical Co.

Z-249 A Sinusoidal Manual, by T. C. Cornell, M.D. 54-page booklet. McIntosh Electrical Corp.

Z-271 Pharmaceutical Preparations of Established Merit. 11-page booklet. E. Bilhuber, Inc.

Z-295 Taurocol Tablets. 4-page folder. Paul Plessner Co.

Z-306 Letters-in-Evidence from Physicians. Philo Burt Mfg. Co.

Z-378 The Heart and its Disorders. 36-page booklet. Fellows Medical Mfg. Co.

Z-414 Habit-Time. 24-page booklet. Deshell Laboratories.

Z-419 Ten Scientific Reasons for Using Pluto Water. French Lick Springs Hotel Co.

Z-428 V-E-M. Scheonmaker Laboratories, Inc.

Z-432 Health, Growth and Happiness for Boys and Girls. 24-page booklet. Ralston Purina Co.

Z-433 Home Treatment of Tuberculosis. 32-page reprint of articles by Dr. Beverly Robinson and others. Charles Killgore.

Z-434 Safe sedation. 12-page booklet. John B. Daniel.

Z-435 A Sanitarium Vacation. 24-page booklet. The Ralph Sanitarium.

Z-439 Naftalan. 10-page booklet. Ft. Dearborn Drug & Chemical Co.

Z-450 The Last Word in Air Cushion Pessaries. Huston Bros. Co.

Z-456 The World's Most Wonderful Canal. 16-page booklet. Reed & Carnrick.

Z-473 The Calcreose Detail Man. 14-page booklet. The Maltbie Chemical Co.

Z-479 Formulas for Infant Feeding with Modified Milk Combined with Sharp & Dohme's Milk of Magnesia. Sharp & Dohme.

Z-516 Atophan-Salicylic Compound. 16-page booklet. Schering & Glatz.

Z-530 Bismuthoidol in the Treatment of Syphilis. E. Fougera & Co.

Z-535 Tissue Fibrinogen in the Treatment of Hemorrhage. C. A. Mills, Ph.D., M.D. Cincinnati, Ohio. Wm. S. Merrell & Co.

Z-536 Foot Weakness and Correction for the Physician. 48-page booklet. The Scholl Mfg. Co.

Z-568 Dietary Sources of Calcium and Phosphorus. E. L. Patch Co.

Z-586 Plants Which Cause Hay Fever. 36-page booklet. The Arlington Chemical Co.

Z-589 The Feces in Diagnosis. Wm. R. Warner & Co., Inc.

Z-590 Journal of Intravenous Therapy. New York Intravenous Laboratory.

Z-611 Theocalcin. A well-tolerated Diuretic Vaso-dilator and Cardiac Tonic. E. Bilhuber, Inc.

Z-619 Diet and Dental Decay. Pepsodent Co.

Z-621 A Few Facts. B. B. Culture Laboratory, Inc.

Z-622 B. A. Culture. B. B. Culture Laboratory, Inc.

Z-623 Baby Leaflet. B. B. Culture Laboratory, Inc.

Z-624 Rational Phosphorus Therapy. 40-page booklet. Ciba Company, Inc.

Z-625 Intestinal Pathology. 16-page booklet. Nujol Laboratories.

Z-626 Pharmaceutical Preparations Preferred by Physicians, 1925. 56-page booklet. Carroll Dunham Smith Pharmacal Co.

Z-627 Instructive Successful Results in Fourteen Successive Cases of Pneumonia Treated with Diathermy. H. G. Fischer & Co.

Z-628 Diathermy in the Treatment of Hypertension. H. G. Fischer & Co.

Z-629 Anemia Subsequent to Anti-Syphilitic Treatment, Louis Stern, M.D. New York Intravenous Laboratory.

Z-630 Resistance. N. Y. Intravenous Laboratory.

Z-631 Medical Pocket Quarterly, January, 1926. Reed & Carnrick.

Z-632 Helping the Doctor Make Friends of the Children. Carroll Dunham Smith Pharmacal Co.

Z-633 Facts Concerning Vitamines. Carroll Dunham Smith Pharmacal Co.

Z-634 Your Prestige and Profit. Carroll Dunham Smith Pharmacal Co.

Z-635 The Triumph of Trifles. 16-page booklet. Swan-Myers Co.

Z-636 Balanced Cassette Changer. 7-page booklet. Victor X-Ray Corp.

Z-637 Victor Eye Magnets, Cautery Transformer, Transilluminator and Accessories. 7-page booklet. Victor X-Ray Corp.

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